DOCUMENT RESUME

ED 134 708 CE 009 340

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|---|---|
| AUTHOR | Wolfbein, Seymour L., Ed. |
| TITLE | Labor Market Information for Youths. |
| INSTITUTION | Temple Univ., Philadelphia, Pa. School of Business Administration. |
| SPONS AGENCY | Department of Labor, Washington, D.C. |
| PUB DATE | 75 |
| NOTE | 260p. |
| AVAILABLE FROM | Temple University, Philadelphia, Pennsylvania 19122 ($7.95) |
| EDRS PRICE | MF-$0.83 HC-$14.05 Plus Postage. |
| DESCRIPTORS | Career Education; Educational Experience; Employment; Employment Opportunities; *Employment Projections; *Information Systems; Job Market; *Labor Market; National Demography; *Occupational Information; State Programs; *Unemployment; *Youth Employment |
| IDENTIFIERS | California; Oregon; United States |

ABSTRACT

This volume brings together the thirteen papers delivered at the Conference on Improving Labor Market Information for Youth, conducted by the U.S. Department of Labor and Temple University in 1974. The papers focus on assessing the role of labor market information in the process of helping to endow young people with what they need to transact with the school-work connection. The beginning papers discuss several of the issues surrounding high unemployment among youth, followed by a factual review of where the United States is and where it is expected to be in the immediate years ahead in some important dimensions of the population, labor force, and employment trends relating to youth. The latter series of papers contain a discussion of the potentialities of improving labor market information for young people, not only in the kind of information but in the manner in which it is made available. Titles of the papers are "The Rites of Passage," "Approaches to the Transition from School to Work," "New Developments in Career Education: A National Perspective," "Proposal for Educational Work Experience," "The New Worker--Implications of Demographic Trends," "Youth Employment and Career Entry," "Youth Employment Opportunities: Changes in the Relative Position of College and High School Graduates," "Improved Labor Market Information and Career Choice: Issues in Program Evaluation," "Improved Job Information: Its Impact on Long-Run Labor Market Experience," "Occupational Data: The Foundation of a Labor Market Information System," "Application of Information Systems to Career and Job Choice," "The California Experience," and "Organization of a Career Information System: The Oregon Approach." (SH)

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# LABOR MARKET INFORMATION FOR YOUTHS

Papers on the occasion of a working conference on the role of information in improving the transition from school to work

Edited by
SEYMOUR L. WOLFBEIN

TEMPLE UNIVERSITY
School of Business Administration

*Philadelphia • 1975*

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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# Contributors

The thirteen papers delivered at the Conference on Improving Labor Market Information for Youth held at Temple University on October 21-22, 1974 and included in this volume were prepared by the following:

Paul E. Barton, *Executive Director, Manpower Institute, Washington, D.C.*

Lois-ellin Datta, *National Institute of Education, Department of Health, Education and Welfare*

Russell B. Flanders, *Chief, Division of Manpower and Occupational Research, Bureau of Labor Statistics, Department of Labor*

Richard B. Freeman, *Department of Economics, Harvard University*

Ronald Gass, *Head, Social, Manpower and Education Affairs Directorate, Organization for Economic Cooperation and Development, Paris, France*

Benjamin Hargrave, *Director, Education/Training Liaison, California State Department of Human Resources Development*

Howard V. Hayghe, *Office of Current Employment Analysis, Bureau of Labor Statistics, Department of Labor*

Bruce McKinlay, *Career Information System Director, University of Oregon*

Herbert S. Parnes, *Professor of Economics, Ohio State University*

Richard F. Schubert, *Under Secretary of Labor*
Harry F. Silberman, *University of California, Los Angeles*
Barry E. Stern, *Social Science Advisor, Department of Labor*
Robert W. Stump, *N.I.E. Associate, National Institute of Education, Department of Health, Education and Welfare*

II The papers delivered at the Conference were grouped in sessions which were chaired by individuals who not only attended the logistics of their meetings but also made substantive comments on the proceedings. The papers also ran the gauntlet of discussants who contributed significant findings to the Conference. Although these are not included in this volume, their impact has been made on many of the papers and the Introduction included here. Chairing the sessions were:
Ben Burdetsky, *Deputy Assistant Secretary for Manpower, Department of Labor*
Janet Norwood, *Deputy Commissioner of Labor Statistics for Data Analysis, Department of Labor*
Edwin L. Rumpf, *Acting Director, Division of Vocational and Technical Education, U.S. Office of Education*
Abraham Weiss, *Assistant Secretary of Labor*
David W. Winefordner, *Board of Directors, National Vocational Guidance Association*
Discussants of the various papers were:
John Cheston, *Senior Program Advisor, Department of Labor*
Stephen J. Franchak, *Manpower Research Coordinator, Department of Education, Commonwealth of Pennsylvania*

Hyman B. Kaitz, *Consultant, Committee on National Statistics, National Academy of Science*
Samuel Munder, *Assistant Director, Vocational Guidance Service, School District of Philadelphia*
Ben Stahl, *Regional Director, Human Resources Development Institute, AFL-CIO, Philadelphia*
Eugene B. Sydnor, Jr., *President, Southern Department Stores, Inc., Richmond, Va., and Chairman of Education and Manpower Development Committee*, U.S. Chamber of Commerce

III The overall conception and organization of the Conference was the responsibility of Kenneth McLennan, Professor of Economics at the School of Business Administration, Temple University, and Deputy Assistant Secretary of Labor for Policy Development 1972-74. The Conference was coordinated by Professor Robert Haakenson, Director of the Bureau of Business and Government Services, School of Business Administration, Temple University.

IV Mrs. Grace Tappert of the Bureau of Economic and Business Research at Temple University's School of Business Administration assisted in the editing and preparation for publication of this volume.

# Introduction

Within six months after the Conference for which the papers in this volume were prepared, the number of unemployed rose by almost 50 percent and stood at a shade under 9 percent of the labor force. A significant part of this upturn was generated by the loss of jobs among adult experienced workers in such sectors as construction and manufacturing and in a range of industries from autos to textiles. Despite the large influx of older workers into the ranks of those without a job, the proportion of all unemployed who were teenagers still stood at 22 percent. In fact, the proportion of unemployed in the age group 16-19 years had not been lower than 20 percent since 1963.

This group of youths is and has been a very diverse one indeed, comprising not only men and women, black and white, but also those with a full-time attachment to the labor force after leaving school as well as full-time students available for and seeking a part-time job, often only during certain seasons of the year. Nevertheless, there has been considerable concern about the factors which generate the high rates of unemployment among the group and various studies have attempted to assess the impact on them of everything from just sheer lack of work experience to the minimum wage to discriminatory attitudes towards young workers to the changing educational prerequisites for employment that have accompanied changes in the occupational and industrial structure.

This concern has included questions as to whether we really afford the right and responsive structures for moving into the labor force that these youths require—whether, as the first paper in the volume asks, we as a society provide the "rites of passage" needed for making the transition. The question is, of course, just as appropriate to the educational institutions as it is to those on the labor force side, and the current emphasis on career education is a sign of the recognition of that fact. At any rate, both here and abroad—as the paper by James Gass of the Organization for Economic Cooperation and Development notes—we are trying to evolve alternative institutional arrangements which will facilitate the move from school to work which, more than incidentally, could and does take place more than just once.

It is in this context that the United States Department of Labor and the School of Business Administration of Temple University conducted a Conference in October 1974 which attempted to assess the role of labor market information in the process of helping to endow young people with what they need to transact with the school-work connection.

This volume, which brings together the papers delivered at the Conference, begins with a discussion of many of the issues just reviewed. Because any specific dimension of the problem—including labor market information—cannot be assayed without reference to its context, there follows a factual review of where we are and expect to be in the immediate years ahead in some important dimensions of our population, labor force and employment trends relating to youths.

In the latter part of this volume the reader will find a series of papers which contain an intensive discussion of the potentialities of improving labor market information for young people, not only in the kind of information but in the manner in which it is made available. Those who must evaluate and analyze and indeed collect this

kind of information will find papers which are not only descriptive of programs of interest, but also papers which ask hard questions on the very role of labor market information in the field to begin with. Practitioners will also find case histories of new programs which again are not only descriptive but which evaluate and recommend courses of action as well.

As some of the materials in this volume indicate we have passed the population and labor force crest of the huge wave of youth which was a hallmark of the post World War II era. For those who had to cope with the wave, sheer numbers often inundated all other considerations in the design of policy and programs. Perhaps now we will be able to pay more attention to quality as well as quantity as we move into the fourth and last quarter of the century.

SEYMOUR L. WOLFBEIN

# I

# Education and Work

In this opening section the problem of improving the connection between education and work for young people is viewed as a crucial matter of social policy. Moving from quite different vantage points, both national and international, the first two writers emphasize the need for a new formulation of the process itself. They make it clear that the problem goes well beyond the particulars of what kind of information is given or how it is provided and involves some very basic questions about launching new institutional arrangements for bringing people across the maze of thresholds into the working world.

In the United States one of the specific policy and program responses in the field has been in the form of career education. Its principles are explained in another paper presented in this section and this is followed by a presentation which describes and evaluates one concrete example of its application in one state and the implications for new institutional formats it suggests.

# The Rites of Passage

*Richard F. Schubert*

The ideas, the techniques, the very subject matter involved in improving labor market information for youths deal with one of the most important areas and one of the most critical periods in the lives of young people. It is worthy of our very best thought and it is very much in the forefront of thinking in the Department of Labor.

In attempting to provide a keynote of a kind to the matter, I have looked at the problem of improving labor market information for youth in terms of a simple forthright, perhaps significant phrase that would indeed serve as a keynote for what we face and what we are attempting to accomplish. At the risk of being accused of practicing anthropology without a license, I believe a useful way of approaching the problem would be in terms of a "rite of passage." As defined in the International Encyclopedia of Social Science, "rites of passage" involve "those ceremonies which celebrate an individual's transition from one status to another within a given society."

There are a number of examples that can be cited. In one tribe, in New South Wales, boys of a certain age participate in a secret ceremony during which a priest knocks out one of their teeth to the sound of a loud

humming from a semi-musical instrument called a "bull roarer." After the ceremony, the young man who by means of the ceremony has been transferred and transformed from boy to adult in an hour is given a new name to signify his changed status.

In Northern New Guinea, the same end is achieved by having each boy enter a large, forbidding-looking hut. As the terrified boys approach the entrance, their elders who are hidden inside begin a chorus of the same "bull roarer" to intimidate the approaching young boys. The boys are sprayed with a stream of water, signifying release from the confines of youth, and at the same time, simultaneous achievement of manhood.

In one of the Fiji Islands, the "rite of passage" consists of being shut up in a hut for five to nine days, frightened by various sounds, being smeared with a yellow dye and other indignities. At this point, each youngster is tattooed with thorns on the chest or the arm, after which a priest, disguising his voice, speaking through a trumpet, reveals to what are no longer irresponsible young people the secrets of the tribe and the rules that govern it.

Almost every primitive society has such "rites of passage." While these at first glance seem fantastic and ridiculous, they actually serve an important function, in fact a number. One in particular should be of interest to every parent and every student of society. Enabling young people to move directly from childhood into manhood or womanhood, they do away with a painful and notorious stage in human development known only as "adolescence." Anyone inventive enough to come up with a similar process of avoiding adolescence for our culture would probably be a prime candidate for the Nobel Peace Prize.

This should by no means signify that we do not ourselves, in this land of the free and the home of future shock, possess the "rite of passage." We do, although it

seems to intensify rather than eradicate adolescence. Our "rite of passage," however, does resemble that of our "primitive" brothers in that it entails a period of complete confusion on the part of the youngsters involved, during which they are lost and almost as miserable, almost like one facing having a tooth removed without novacaine. The resemblance, of course, does not extend to the use of "bull roarers," but then again, the inhabitants of New Guinea, New South Wales, and Fiji do not have the Rolling Stones either to fill that void.

Our domesticated "rite of passage" begins when a young person starts what must seem like an interplanetary journey to the world of work. That process obviously involves a thousand questions: Should I stay in school? Is this stuff they're feeding me really of any use? What should I study? And for what jobs? I read that there is a shortage of psychosemanticists; how do you get to be one? Does that mean here in Omaha or is it in New York or Washington? Where do they need them more? How can I find out? Will there still be a shortage after I've learned to be one? How much will it cost? How much will I make after I graduate? Where do they teach it? And there are other questions, too, even in this kind of fairly materialistic age. Questions like: Is it a good thing to be? Is it worthwhile? Will I be helping people? And would you believe: Would my parents be proud of the fact that I am one? There are personal questions too: Am I capable of learning it? What should I study now in order to prepare myself? And always these questions as well: Whom do I ask? Where do I find the answers? Where are the answers?

In our information-rich society, where we often have statistics to respond not only to every known need, but often, it seems, to some yet-to-be-discovered need, the answers are everywhere. But as so often happens when the answers are everywhere, the answers are nowhere. The fact is that with the exception of some, all too few,

school systems, there simply is no single source that can answer these questions. There is, therefore, no "rite of passage" from school to work as constructed for modern American youth as the "rites of passage" for primitive people are for their young people.

Perhaps in this most complicated society, it is too much to expect that kind of effectiveness in dealing with such a basic human situation that primitive, more simple societies have possessed, seemingly, for millennia.

Frankly, I don't agree with this defeatest point of view. I don't believe that we have to be less effective than peoples living in Stone Age cultures. I believe that there is a lot we can do, and certainly a lot that we must do. I was, therefore, as I hope you were, highly encouraged when, at Ohio State University, President Ford announced that he was asking the Departments of Labor and HEW and Commerce to report to him on "ways of bringing the world of work and the institutions of education closer together."

Two days later, with what I am sure you will agree was an excellent sense of timing, the Department of Labor's Manpower Administration announced a program designed as a step toward that. The program in brief seeks to aid people in the job and career selection process, providing them with current, accurate, and locally relevant occupational information. Of course, the Labor Department involvement in the field of occupational labor information is already quite extensive. The Bureau of Labor Statistics, the Manpower Administration disseminate a variety of occupational data: *The Occupational Outlook Handbook, Dictionary of Occupational Titles, Counselors' Guide to Manpower Information, Health Career Handbook,* and a monthly microfile, *Job Bank Summary Report,* and a wide range of specific particularized studies, often used by counselors and students alike.

Despite the availability of this information from the

federal government, as well as occupational information provided by private sources, it is increasingly obvious to all of us that many young people receive erroneous information about the world of work. Some of it is ineffective and even damaging, these "rites of passage." Seeking to devise a strategy to respond to this problem, the Department of Labor was encouraged by occupational information efforts that have emerged in several states and localities. These efforts clearly demonstrate that systems can indeed be designed to provide relevant occupational data forms that young people, both in school and out of school, can comprehend, understand and apply. The experience gained through these projects has encouraged the view that their extension is both feasible and desirable, provided such extension is grounded in practical labor market information obtained from reliable national, state, and local sources.

The effort announced two days after the President spoke at Ohio State, addressing himself to this problem, involves a grants program incorporating many of the principles and practices that have been proven successful in state and local programs. This approach offers a number of advantages, not the least of which is that it can stimulate specifically the kind of creative experiments that have yielded such excellent results in Oregon, and elsewhere in our nation.

Under terms of the grants programs, ten initial grants averaging $300,000 each have been made during the fiscal year that ends in June 1975. These grants are simply designed as seed money, intended to stimulate the creation of occupational information systems in the ten states chosen from those who made application.

I want to point out here that while we are delighted to be able to respond to the President's initiative by launching this program, we simply view it as a first step, a part of what needs to be done to create a rational, indeed a national, "rite of passage" for America's young

people. The overall problem of bridging the gap between education and work involves clearly many, many elements. These include what might be called the seven dimensions of isolation of education from work.

Dimension one is characterized by lack of information by both students and educators on the world of work experience.

Dimension two involves the lack of relevance and the meaning of such education to work, a lack that could be remedied through a better understanding by educators of the kinds of problems that education could help to resolve.

Dimension three involves the lack of knowledge by the world of work of the kinds and enrichment that education can provide.

Dimension four involves the division of our lives into a time for education, a time for work, a time for retirement, instead of being seen for what it is: a process of continual development and potential continual enrichment.

Dimension five involves the segregation of ages that serves to reduce the input that youth and adults have into each other's attitudes, knowledge, and well-being.

Dimension six is reflected by the lack of opportunity on the part of youth to assume increasing responsibility and working together with adults in a wide variety of circumstances.

Dimension seven is the distrust that has grown up in educational institutions of the practical and the economic; and conversely, in the world of work, the distrust for the humanizing influences of education.

All of these dimensions of isolation between education and work are magnified by an elaborate network of structural barriers, law regulations, customs, attitudes. Many of them may prove highly resistant to even the most dedicated efforts to change. But none of them should be premitted to stand out against our common

desire and our common need to develop a rational "rite of passage" worthy of our nation, worthy of our young people who inhabit it, and who indeed will inherit it. It is for this reason that the Department of Labor, HEW, and the Department of Commerce have established the Work Education Policy Group; to isolate key issues and develop proposals by means of which the federal government as a whole, as an entity, can take a range of significant actions.

The problems to be discussed here at this conference are entirely consonant with those being considered by the Work Education Policy Group, and will certainly contribute to its ongoing deliberations.

One final word in conclusion: Our nation seems to go through cycles of pessimism and optimism. Right now, it would seem we are in a pessimistic cycle that is characterized by an emphasis on our problems rather than on our capacity to solve our problems, and the fact that every problem is, indeed, an opportunity in disguise. A few years ago our attention was focused on our capacity rather than on the difficulties that would test that capacity. In view of our present pretty somber mood about things, I think it vitally important to look at our problems realistically, to seek and to generate a sense of our enormous, in fact unmatched, capacity of solving them. Thus the initiative of the President in this area is doubly important. Not only will it produce practical steps toward giving our nation a "rite of passage" worthy of our young people, it will also help us lift our eyes upward, and remind us that we don't have to stand numb, powerless in the face of challenge; but that we can still, as we have so often done before, use our hearts, our minds, our spirits, our will to create a better society.

# Approaches to the Transition from School to Work

*Ronald Gass*

The subject of the transition from school to work is a very daunting, difficult, important affair. In beginning to analyze it, I started to look for scapegoats. After all, if it is all going wrong, somebody must be to blame. Of course, my thoughts first turned to Doctor Spock, since he taught us to teach our children to behave as though institutions and society could adapt regardless. Then I thought of Margaret Mead who taught us that whatever the institutions of society were, individuals would adjust their personalities. However, I finally felt that I should choose a European to be the scapegoat. Of course, discretion being the better part of valor, I have chosen a dead European. I have chosen Mr. Hegel who is responsible for embarking us on the line of thought that most of our problems are to be stated, analyzed, and solved in the terms of an abstraction, which we call "society." In the present subject, I can see the abstraction as the labor market and the educational system; and they are both related to the society. Yet, oddly enough, the sort of societies in which we live are supposed to function according to another principle which is, by and large,

that what we call "society" works best when individuals are able to behave both rationally and freely. So the point of departure for what I will have to say is that there is a rationality of individuals which is not the same, and indeed may conflict with, the rationality of society.

Following that idea, there seem to be two fundamental points at which individuals may find themselves in conflict with society. One is that we depend very much on what I would like to call the "security of our destination." We need to know where we are going to some extent; we need to see where we are going. We all know that in a traditional society, an individual belongs to a social-educational-occupational grouping which somehow defines where he is going. And we all know today, because of educational growth, geographical mobility, occupational mutations, all the paraphernalia of economic growth and social change, that this way of defining the destination has disappeared.

The second fundamental point is what we could call the lack of conviviality, or if you would like to take the opposite view, segregation, reflecting the reality that individuals need to feel connected by human relations beyond themselves and beyond their own group. In the sort of societies in which we now live, the phenomenon of segregation is present in terms of the generation gap, the gap between the school and the community, the gap between the intellectual values and skills and those of a practical or manual character.

But before proceeding, I would like to add that this problem of youth is also the problem of many other groups. It is, for example, also the problem of retirement. I dare say that many of us here react, respond, look to retirement in very much the same way that young people feel about their working situation. And I dare say that the aged feel very much the same way, and maybe married women, those who (I nearly said "condemned") are brought by society to live in suburban communities

to be separated from the action, that they too feel these phenomena of segregation and the absence of a destination.

Now if we are to overcome these gaps in our social arrangements, then we have a problem that calls for more than information and guidance. We cannot solve these breaks in the life patterns of individuals, which are the consequences of institutions, simply by providing more information.

There is a good deal of theory and empirical evidence to suggest that if you had to choose between the influence of information and the influence of persuasion and the influence of participation of doing something—it is the latter which will lead people to change.

So, I would like to suggest to you that the basic problem of the transition between school and work is more than a problem of information. What we need, I suggest, are transitional institutions, institutions which enable young people, and, if my analysis is correct, not-so-young people, to have a foot in two worlds; the world that they are leaving and the world to which they are going.

Now what I would like to explore with you then is the idea that we can create another way of doing it, another model. It is not a real model, but it is not altogether an invented model. It's a model I will draw from what I see to be the trends in Europe. (I wouldn't be disposed to try to develop a model based on the trends in this enormously complex and unique country.)

Broadly speaking, I would like to say that the change that is taking place is a move from the great objective of society which was to say that the young people will be introduced into society, will be socialized, will be selected, will be brought into the social structure by a process of increasing, lengthening, compulsory education. The latest historical expression of that was after the age of 18. I say that on the basis of a specific political discussion which took place in Versailles in 1971 when the Euro-

pean ministers of education met, and the underlying idea was that the next move is toward compulsory education for everybody to the age of 18. Two years later, in 1973, in Berne, that political goal had been sunk out of sight, disappeared, lost, put back. And put back for what? That is the question. What do we put in the place of the idea that young people should be connected with society via a process of continuing and comprehensive education to, shall we say, the age of 18?

What I would like to suggest to you is that what is being put in the place of that idea is a different one, namely, of offering young people a wider, more flexible, more realistic range of work and social opportunities. If you like, what we need, and this I recall in the paper by Undersecretary Schubert when he said this was a social problem, what we need is a social policy. What we need is to look upon young people as an integral part of society. What we cannot afford to do, I think, is to fail to create constructive alternative opportunities for them. It surely is a great criticism, a great failure of us all if we really have to go on saying that some group of young people cannot find responsible, constructive work.

What would be the major principles of this policy? What would be the leit motif of such a policy? First of all, I think, and here I am working between the world of what is happening and what I think might happen, we would say that these opportunities would be more individual. It would recognize that we cannot cram all young people into the same mold. There are different parts of development. Secondly, these parts of development would be more autonomous. In other words, the young people themselves would define them. They cannot be defined for young people by a system. Thirdly, they would be more flexible. We would not wish these arrangements to be such that we would channel young people as we have done in the past, for example, by allocating them solely to an educational stream. Fourthly, this policy would be

integrated. That is to say that we would have to accept that for a young person in a certain sense work and education are alternatives. At least, if we can make work a learning experience, there may be alternatives. And of course, work and welfare alternatives. That is to say if we are led by our social values to have to protect young people, and, in a certain sense, provide them with income, presumably to provide them with income through work is an alternative—presumably a preferable alternative. Fifth, we would have to agree that the social opportunities and the work opportunities are alternatives. It may be just as valuable to society that X is in a job with Company A or doing some socially useful task of the social service kind.

But how can we develop our institutions so that they become meaningful? I think the first point has to be that we must recognize that the start has to be made in the basic educational system. We cannot connect education to work simply by discussing the problem as if it's a matter of the periphery of education and the periphery of work. It will not do. What, therefore, would be the basic educational system which would be likely to respond to this ambition that the two systems would connect more effectively?

Here is an interesting contrast between the sort of debate that begins in this country and what I see to be the emerging point of view in Europe. The first thing that can be said is that nobody today is arguing for a third extension of compulsory schooling in advanced countries. That seems to be settled. Nobody is trying to argue in advanced countries for pushing compulsory schooling on young people. Indeed, in Europe one begins to argue that maybe one should extend compulsory education—but downward. This is an argument which has to do with early childhood education and the reality that when you provide voluntary facilities of education, it's a privilege that tends to be taken up. But from there I

don't see any sign in European countries to give the children to the work institutions. The line of thought seems to be towards a basic middle-school to the age of 16. This is present in Sweden, the Ukraine, France, and Germany, and also, interestingly enough, in the developing European countries such as Turkey and Portugal. But this basic middle-school would be based on different principles. First of all, individualization. Even there, although we have the ambition to be egalitarian, it doesn't mean that all children get the same. Secondly, since we maintain the ambition, the hope that the school will be an equalizing institution, we have to be frankly compensatory. We have to discriminate in favor of the disadvantaged—not only in early childhood, in the primary school, but in the secondary school. I think this is emerging as a principle. The third thing is that we wish to abolish the general and vocational division in the basic school because we see it not only as inegalitarian, because we know who goes to the vocational schools, but also because we feel that the evolution of society and the demands which the common man makes on society calls for all children to have a firm foundation in general education.

This is not the same thing as to say that this education will be divorced from work. It is a different point to say that we wish to prepare children for work vocationally as compared with the wish to have children understand what the real world is. I think that any of us would accept that it is perfectly possible for children at that age to learn from the working environment.

Indeed, it is one of the strange accidents of educational history that the basic pedagogical concept of humans as distinct from animals is that humans learn by relating to conceptualization, to do something by concept, as against the animal learning process which is clearly learning by experience. Yet in most educational practices, this relationship of the conceptualization of doing seems to be lost. At any rate the first point is a

new sort of basic middle-school. Its purpose in society is to bring as many children as possible to the point where, say at the age of 16, they face a diversified range of developmental opportunities of a mixed character, education and work education.

In other words, we try to bring them to that point in the system where, as much as possible, they are equal. But it is the next stage, 16 to 19, where the great debate is on. It is true in this country, it is true all over Europe; it is true in every country. There is a complete change in approach at this age, away from this rush toward comprehensive secondary school for everybody. Of course, this is the crucial time. It is in the choices at that age when education and the relationship to work and the relationship to the social structure are settled. It is here that we allocate young people to their place in society.

There are many experiments going on in many countries based on a few major principles which seem to be emerging.

First of all, for this age group, the idea is to provide a new institutional framework, a diversified set of opportunities, looking rather like what happened to post-secondary education, both diversified and integrated in the sense of having flexibility between them. Secondly, and this is very much present in the debates in a number of European countries like Sweden, Norway, Germany, integration of the general and the technical. There is a difference here in the way you in the United States are considering this. My impression is that you are moving towards, you are attempting this problem of the transition by giving more weight to the vocational. This is less true of the European scene. Certainly much attention is being given to the relationship to the real world, but that is not being translated by a division between vocational and general.

The third is the much greater emphasis on professional preparation; that is to say the idea that all children,

whether in the general or vocational, would in some way be prepared for the practical world that lies ahead of them. Fourthly, and this is a major point, a crucial point, the idea of alternating between school and work; that is to say very many different patterns of alternating between school and work, part time release, mixed courses, in and out of the system. All these ideas are being developed.

But there is one great problem with all of this, I think, at least as we see it in the OECD. The danger is surely that once you begin to take the point of view that people in the 16-19-year age group will follow different paths, then if you are honest, you must admit that there is a serious danger of a social selective process.

And what is the answer to that? That is one of the great questions. One possible answer to that is what we call now in Europe "recurrent education." It is not the same meaning often given to that term in the United States. It is the idea that there is a right to return; that the individual not only may come back, but has a right to come back; that those who decide to enter the labor force have in a certain sense the ability and right to return.

Now this is taking various forms. But let me emphasize that what I am describing is not yet an operating reality. What I am trying to describe to you are trends, putting together many disparate things trying to create a model, a different one, which would replace the old one. But the basic point here is that unless somehow or other you can build into your system something like a right which can be deferred and later used, then I think one is open to very serious controversy on egalitarian grounds.

It remains to be seen what the reality of some of these experiments will be. Many of you know that in some European countries, France and recently in Sweden, and to some extent in Germany, this idea of a right to an educational leave of absence is beginning to be estab-

lished. It is a legal right which the members of the labor force have. In some countries, the more sophisticated form of that idea, namely a deferred right, is also beginning to get politically discussed, and to some extent already exists.

Now, if we put all these things together (and we are still working with a model) then we are approaching a very fundamental change in what we call the labor market. First, it is a fundamental change in what we see in our mind's eye when we conceptualize this thing called the "labor market." Surely, what it means is that for the notion of the job-seeker we have to substitute the notion of the career-seeker, because the whole idea is based on the notion of different life patterns, different life paths, different routes through the institutions by different individuals. Second, and without going into the complexities of the internal labor market, we would all recognize that a society which gives opportunities to people in work through training, that has notions of career guidance, that in that sort of society one could not succeed without a much more intimate connection between the labor market authorities and firms in order to bring into better relationship the public, the individual, and the firm in the internal labor market.

The second point is if this is the reality of the process, then the information that is required is not so much about jobs as about careers. What young people want to know about is where can they go from here to there to there. What's the route? What should they embark on?

Thirdly, it would imply a complete breakdown of the distinction between educational and vocational guidance. It would no longer make any sense to be talking to young persons as if their educational future was divorced from their vocational future. It wouldn't be a reality. I know that in this country, for historical reasons, you still have institutions which make this distinction.

And fourth is that no system in the world, no infor-

mational system, no guidance system can relate individuals like an engineering job to these opportunities. There has to be some process of search. In that connection, a very interesting policy has just been announced by the French Minister of Labor where he has accepted what he calls "the right of a young person to make a mistake." They are about to give any young person who considers that he has made a mistake six months to have another go with access to further training. This is to be financed, I believe, by the permanent education fund, because it was discovered that 50 percent of the youngsters feel that they are in the wrong spot.

I think this is a crucial point. You couldn't imagine, could you, any information system or any guidance system, no matter how vital and important it might be, matching perfectly such complex individuals to such complex opportunities.

Now this leads to the final point, and in a certain sense this is the most important and the most intimidating. Of course, where there are no jobs there is no transition. I must say that I get really worried to hear people talking about a million youngsters out of work. What it must mean for all of them is somehow overwhelming. I would like to say that this is not only a problem of the United States even though Europeans felt this was not their problem to the same extent. But the problem begins to emerge in Europe also. I suppose one is bound to be led to the conclusion that whereas manpower policy traditionally has been operating on the supply side, by and large taking the view that one is working on the supply of manpower to adapt it to employment opportunities, in the future we must move to the demand side. I don't see how one can possibly escape that as a consequence of this reality. For example, the health system, the vocational system, and the welfare system involve a lot of money. If it is not possible to deploy these vast resources in such a way as will be job-creating, it would

be a remarkable thing. It must be possible to deploy such vast sums in accord with a policy of job creation, particularly in the social sector. One interesting thing the Germans are proposing is to accept social service as the equivalent of military service, which would be an important step in this direction.

From what I understand from your President's recent statement you are moving in the direction of using public resources to create jobs when necessary. However, I suppose that sooner or later one must accept the challenge also of doing that in the private sector. Insofar as public funds are necessary, insofar as we accept the commitments for young people, presumably we will prefer to use those resources to create jobs, to maintain their entry to jobs rather than through welfare. I suppose most of us would agree that a young person out of a job as compared with a young person in a job is a cost to society. We might like to add an X which represents the cost to society. I don't know what that cost might be—that would depend on the values of that society. Even so, I think there is an important point that has to be developed there. What would be clear is that if one were to accept such a principle, then it would be the obligation of the society to create jobs, not only through the public sector but with the cooperation of employers in some form of job subsidy.

Having spelled out the model, and it is a model, not a policy, I do feel that it is such a grave problem that we have to think in action terms as well as in analytical terms. Where does it take us to? Is there any hope? Well, it's obviously a very fundamental problem. One couldn't leave this discussion without recognizing that it will be a tremendous challenge. I would sum it up as follows: We need, first of all, a much more flexible educational system which will avoid human capital being generated without any real relationship to the economic system. More flexible educational work routes, more flexible

opportunities, with the possibility of deferred opportunities, may make the individuals and their choices more responsive to a changing economic scene.

The second point is that I think we need to escape from what I call the "technological trap"; that is to say the idea that it is technology which defines jobs. Surely, to a certain extent, what the young people are reacting against is the idea of a society where jobs and activities are defined in that way. Here, I think, there is some hope. I notice that employers are beginning to take the view that they have a certain freedom with technology. It didn't used to be an issue. One used to say that the technology defined the occupations. But it is an issue now that you could, you do have technological options, you can act toward different types of skill patterns. Certainly you could in the service sector. It would be quite ridiculous to behave as though there were something called technology in many of these services, which by definition determine what the job will be. Maybe there is a freedom of maneuver which should be exploited. Let's escape from the technological trap.

Thirdly, I think, we need more opportunities for adults to develop. If there were more social mobility for adults, the world would look like a better place for the youngsters, and there would be more room. Any maybe, if we can't solve this any other way, the adults will have to move over. I'm sure some of us would welcome the idea of not fully retiring but accepting less of the burden earlier if thereby there were more opportunities for young people.

Summing up, therefore, I think we have to move to get away from the world in which social mobility is defined only by formal education, by access to educational opportunities. In the 19th century, the world of mobility was one of the self-made man, who rose on the job. In the first half of this century, we have created another system of sociability, the educational system. Perhaps

what we need tomorrow is a world where social mobility is provided by these two systems working together.

I would like to end on a word of hope. One could not possibly succeed with the policies I have outlined if one were to behave as if there were separate educational policies and labor policies and welfare policies and public policies and employers' policies. It is quite impossible to solve this sort of problem in that way. It was, therefore, gratifying to me to hear Undersecretary Schubert say that in this country you have begun to bring these diverse groups together. What comes out of that remains to be seen.

# New Developments in Career Education: A National Perspective

*Robert W. Stump*

The papers presented at this Conference and appearing in this volume, from Undersecretary Schubert's keynote address to Dr. Gass' provocative presentation, underscore the conclusion that we are concerned not about labor market information for youth, as we are about labor market choices—decisions, if you will—that youth face as they go through our American rite of passage from youth to adulthood. Dr. Gass, in his paper, expanded this perspective to show that we must also be concerned with the choices individuals must make throughout life as they move along and between various career paths.

Labor market information is only one part of this process of choice, or of these choices.

This paper therefore is about a recent (and not so recent) development in education, one of whose central aims is to improve the quality of these choices for youth and for adults.

But first, I must say that I, too, have made some choices. The discussion of a "National Perspective" will not be a recitation of the various projects or programs at the National Institute of Education or the U.S. Office of

Education.[1] Neither will it be concerned with any specific projects in local schools or the efforts of the business leaders and labor unions in furthering the goals of career education.

On August 30, 1974, President Ford addressed the summer commencement exercises at Ohio State University. In speaking to the graduates, the President was sensitive to the concern of many of them and thousands of other young men and women who have invested years of their lives and thousands of dollars in pursuit of a college degree—getting a job. May I quote a few words from his remarks.

> Although this administration will not make promises it will not keep, I do want to pledge one thing to you here and now. I will do everything in my power to bring education and employers closer together in a new climate of credibility—an atmosphere in which universities turn out scholars and employers turn them on. . . . At home the Government must help the people in doing things they cannot achieve as individuals. Accordingly, I have asked the Secretaries of Commerce, Labor and HEW to report to me new ways to bring the world of work and institutions of education closer together. . . . As a starter, the Department of Labor will shortly announce a pilot program to improve occupational information for graduates and others in making career choices. There will be grants for state and local initiatives to provide data on occupations available and to help channel the potential employees into positions which are not only personally satisfying but financially rewarding.

For those who have become hardened cynics about Presidential statements, I would like to turn to the Law.

For two years the Congress worked on the educational amendments of 1974, more popularly referred to as H.R. 69. Section 406 of this Law, signed ten days before the Ohio State speech, talks about career education and what the Congress would like to see happen. The Law

states that it is the sense of Congress that "each state and local education agency should carry out a program of career education which provides every child the widest variety of career education options which are designed to prepare each child for maximum employment and participation in our society according to his or her ability." [2]

Congress also addresses the question of "What is Career Education." I quote further,

> For the purposes of this section the term "career education" means an education process designed: (1) to increase the relationship between schools and society as a whole; (2) to provide opportunities for counseling, guidance and career development for all children; (3) to relate the subject matter of the curricula of schools to the needs of persons to function in society; (4) to extend the concept of the education process beyond the school into the area of employment and the community; (5) to foster flexibility in attitudes, skills and knowledge in order to enable persons to cope with accelerating change and obsolescence; (6) to make education more relevant to employment and functioning in society; and (7) to eliminate any distinction between education for vocational purposes and general or academic purposes. (Sec. 406 (d))

The Law makes two interesting points. First, career education is an "education process." There is no mention of a program or project, but rather a process or theme that will have implications for education at all levels.

The second point is that it calls for an elimination of the distinctions between education for vocational purposes and general or academic purposes. These distinctions are not subtle and could affect programs in almost every secondary school in the country.

Beyond the actions of the President and Congress, we have Federal agencies which support programs of career education. One of the anomalies of career education is

that it has drawn so much attention and has been introduced into the programs of so many school districts without a Law being enacted in support of career education. The Office of Education, under Commissioner Sidney Marland, allowed state and local school districts to apply for and use the funds appropriated for related programs to begin the process of career education. As a result, USOE spent, in fiscal year 1973, just over $43 million in support of career education with funds from 16 discrete programs. Of these funds $18.6 million went for operational models serving students in various grade levels while the remainder went to students indirectly through the development of material and staff training.

It has been the policy of the U.S. Office of Education not to offer an official definition of career education. This has had at least two effects. One intended effect was to allow the process of career education to develop in many different ways, according to the needs and resources of local people. The second effect has been to make it almost impossible to find out what programs and projects have been identified by the states as essential to this process. Nevertheless, there is a growing body of evidence to document what is happening.

- A recent conference on Career Education, the first for state directors, drew 152 people representing 43 states and three territories.
- A number of states have taken the lead in developing a statewide effort in career education, including New Jersey, Arizona, Oregon, Ohio and Louisiana, which has appropriated $8 million for its career education efforts.
- Of the money spent on career education in 40 states, reported in a recent survey by the chief state school officers, the state and local share of expenses is almost 70 percent of the total.[3]
- This same survey reports that 14 percent of the elementary school students in 29 states were directly

involved in career education programs during the 1973-74 school year, an increase from 6 percent the year before.

- In-service training for elementary school teachers in 28 states during the same year reached almost one out of every twelve teachers.
- Of the 36 states responding, 20 had established operational definitions of career education embodied in a state agency policy or position statement.
- As an example, Texas has spent over a quarter of a million dollars in activities related to specifying the outcomes and objectives for career education. They started by asking what a 17-year-old student would like if they had been through a complete career education program. After developing a set of outcome statements, and behavioral objectives for these outcomes, tests to measure attainment by the students in each of these areas are being developed.

Examples of programs and activities could be multiplied. A bibliography on career education published 18 months ago by USOE had over 900 entries, including almost 300 descriptions or examples of pilot projects, curriculum guides, teaching materials and instructional programs.[4]

This litany of activities and programs that are related to the process of career education does not pretend to endorse any or all of the activities as "great" career education and things every school should immediately do. As noted above, the variations on a theme are legion. Project titles can be misleading; many career education-like activities are embedded in other activities or called something else, and some career education programs on closer inspection seem like general educational reform or improved vocational/technical training.

Nevertheless, it seems safe to say that from a national perspective, the process of career education is alive and moving.

Before saying a few words about how this process of career education relates to the career information needs of youth, let me address the question of just what career education is. Over this last summer, Dr. Ken Hoyt, Associate Commissioner of Education for Career Education, has held conferences with three prominent groups to discuss the basic goals of career education and what must be done to achieve these goals. The largest group was over 225 local school educators from the 50 states who have been organizing, running, or participating in on-going career education programs. The second group represented over 40 persons with primary statewide responsibility for career education or other fields such as guidance, curriculum, supervision or administration. The third was about 20 "national leaders" who have written or spoken prominently about career education or who have national reputations in diverse fields such as counseling psychology, philosophy, sociology, anthropology and economics.

The degree of agreement on the basic assumptions, goals and practices for career education was outstanding. Virtually all the participants in these meetings agreed that career education was a response to a variety of conditions in our society and our schools, including:

- Too many persons leaving our educational system are deficient in the basic academic skills required for adaptability in today's rapidly changing society;
- Too many persons fail to see meaningful relationships between what they are being asked to learn in school and what they will do when they leave the educational system. This is true of both those who remain to graduate and those who drop out of the educational system; and
- Too many persons leave our educational system at both the secondary and collegiate levels unequipped with the vocational skill, the self-understanding and career decision-making skills, or the desire to

work that are essential for making a successful transition from school to work.

In addition to agreement with these conditions, almost nine out of ten members in each group agreed that a number of basic major educational policy changes should be championed by career education, including:

- The installation of systems for granting educational credit for learning that takes place outside the walls of the school;
- Increasing use of noncertified personnel from the business-industry-labor community as educational resource persons in the educational system's total instructional program;
- Substantial increase in programs in adult and recurrent education as a responsibility of the public school educational system;
- Substantial increases in the career guidance, counseling, placement and follow-up functions as parts of American education;
- Increases in participation in educational policy making on the part of students, teachers, parents, and members of the business-labor-industry community; and
- The installation of performance evaluation, as an alternative to the strict time requirements imposed by the traditional Carnegie Unit as a means of assessing and certifying educational accomplishment.[5]

In response to this call for changes in American education embodied in the process of Career Education we at the National Institute of Education and USOE have developed a scheme for looking at the relationship of one's educational experience to later experience in the world of work. We recognize that many factors influence the career choices that each individual makes. For example, when economic conditions are good, plenty of

jobs are available and a person can more easily pick and choose from a number of opportunities. When conditions are bad, the opportunities are more limited. Education and schools can do little to improve directly the general health of the economy.

Other factors, over which education may exercise little influence, are the labor market policies and practices such as the kinds of skills needed by employers and the criteria they apply in the selection of individuals for the jobs.

NIE's research and development effects are continuing to work on ways to improve the significant contributions education can make. Among these are:

- Education can help an individual better identify the general and specific skills needed for career entry and progression in different occupations and educators can improve their ability to teach these skills to youth and adults.
- Education can lead to a better understanding of the skills needed by an individual to cope with and manage his/her participation in the world of work, and we can find better ways to teach these coping skills.
- In the course of getting an education, an individual can come to a better understanding of what career opportunities are available now and are likely to be available tomorrow; a better understanding of his or her abilities and interests, and how best to match opportunity and preference.
- Through changes in our educational programs, we can enable more adults to continue their education throughout life for both professional and personal development.
- Through education, we can improve placement and follow-up services for better matches between a person's competencies and job opportunities.

- Education can help people understand how the economic system operates, preparing people to adapt to changes and increasing the influence knowledgeable citizens can exert on choices that affect economic conditions.

We believe that the triple thrust of (1) research to better understand the relationship of educational experiences and to later experience in the world of work; (2) careful development and evaluation of projects and materials to improve the process of career education; and (3) support for ongoing programs and projects in local schools will enable the agencies of the Federal government to carry out the intention of Congress to implement the process of career education in all our schools.

It is also important to keep in mind the distinctions between career education and what we know as vocational education.

Career education includes vocational/technical education: the difference is between training for a single job or occupation and concern for how education affects the sum total of one's life work, the development of which represents many choices throughout the individual's lifetime and is influenced by many factors in addition to technical skills.[6]

This vision is shared by the National Advisory Council on Vocational Education. In a National Policy Statement on Career Education issued last fall (September 1974), the Council is stating how it understands the call for career education issued by then Commissioner of Education, Sidney P. Marland, three years ago:

> "Career education" is NOT simply a new name for what we now call "vocational education." The Commissioner was not saying that our concept of vocational education should be somewhat enlarged and the enlarged concept called "career education." Nor was he saying that new programs in something called "career education" should be developed at the cost

> of vocational education. . . . He was saying something much different and much more fundamental. He was saying that the old distinctions which have crippled our educational effort should be forever laid aside and new unity of purpose be expressed by a new universal term: "career education."[7]

What then, is the role of the process of career education in the task of improving labor market information of youths? I propose three ways.

My basic assumption is quite simple and it is one you agree with. Information in and of itself is useless. We might be able to develop the best methods of projecting the needs for various skills and talents in our economy. We might also be able to identify the ways in which this labor market information is useful to individuals at different stages in their life. Unless the individual knows what to ask, unless he or she knows where to get the information and unless the information is readily available, it will be useless.

First, career education can help individuals learn about themselves and the questions they should ask about prospective careers. The career education process, begun in the early grades, will help youngsters to begin to think about what they can do and what will be available for them to do in the future. A young adult, faced with the prospect of having to drop out of high school, will be able to ask about the long term effects of this action on his or her future career. They could ask the question "Will it hurt me if I drop out of high school and in a few years get a high school equivalency certificate by passing the GED test? What will be my chances for further education and career advancement?"

This is a legitimate question, and a very real life situation for the three-quarters of a million youngsters who each year leave high school before graduation. As yet, we do not have the data to show that he or she will suffer very little, very much, or not at all, if this option is

chosen. Surveys, longitudinal and cross-sectional, have generally not asked the respondents if they have a high school equivalency certificate. We have created a lot of Ph.D's by documenting and analyzing the relative returns to education from four years of college versus four years of high school. But we have not or are just beginning to ask about the relative return on H.S. equivalency or other types of competency certificates versus a regular diploma. Since almost half of a million adults took the GED test last year, and over 2.4 million have received certificates in the last 20 years, we should begin to get the data to answer this young person's very real question. I might add that about one million of those who have received the certificate have done so in the last four years and the median age of those taking the test has dropped from the late twenties to the middle twenties in that same period.

Second, career education can prepare school-age youngsters to know where to get the information they want. Several studies have documented the fact that high school counselors do not spend very much time with students who are about to go into the labor force after graduation. While career education will help improve the services of school counselors, it will also instruct students about the other sources available, where they are located, and how to interpret the information they get.

Third, the process of career education will help realign the institutions of education and the world of work to function more effectively together so that people can pursue their careers more effectively. Two examples: One of the first things we have found school districts doing in their career education programs is to involve the employers in their community more deeply in the planning and execution of the career education activities. Also, we have found that within the educational establishment, career education programs have been the vehicle which allows vocational educators and nonvocational educators to

work together, in many cases for the first time. State and local offices are sponsoring programs together. Administrative structures and hierarchies are being realigned to end what the National Advisory Council on Vocational Education referred to as the "old distinctions which have crippled our educational efforts."

We believe that the process of career education will form a vital link between education and the world of work. It will be a vital link in the utilization of labor market information for youth and for adults. Thus, simply having better labor market information is not the answer. Career education programs may be among the greatest consumers of such better information, and those who are part of this process, the career educators, should be among those involved from the beginning in developing new ways to collect, analyze and use this information.

Notes

1. Information on the federal programs can be obtained by writing to the Career Education Program, National Institute of Education, Washington, D.C. 20209, or to the Office of Career Education, U.S. Office of Education, Washington, D.C. 20202.
2. P.L. 93-380, Sec. 406.(a).
3. These figures based on a survey of State Directors of Career Education conducted by the Council of Chief State School Officers in November 1973.
4. *Bibliography on Career Education*, U.S. Office of Education, Washington, D.C. 20202, Working Paper, May 1973.
5. Complete results of these conferences and recent policy statements on Career Education can be obtained from the Office of Career Education, U.S. Office of Education, Washington, D.C. 20202.
6. The Vocational Education Act of 1963 as amended in 1968 refers to training for occupations that do not require a bachelor's degree. This discussion of career education is more in line with the concept as outlined in the Educational Amendments of 1974, discussed above.
7. *A National Policy on Career Education, Eighth Report*, The National Advisory Council on Vocational Education.

# A Proposal for Educational Work Experience

*Harry F. Silberman*

In a recent case study in the Los Angeles School District, this writer evaluated the effect of a planning grant on career education programs.[1] The results showed that not much happened for a variety of bureaucratic reasons, but perhaps the most important lesson to be learned from the study was that it was probably unrealistic to expect large school districts to change themselves without substantial external leadership and support. A better strategy would be to find out what the districts do best and attempt to build from there, expanding and improving on best existing practices and establishing national policies to help in the large scale dissemination of improved versions of those practices.

By way of example, this paper describes the very impressive work experience program in the Los Angeles School District and describes how federal leadership might extend and improve on it.

Despite all the organizational obstacles encountered by the planning unit in the Los Angeles School System, the most important opportunities for the achievement of the goals of career education are already to be found in the educational work experiences that are provided by

the district. Many high schools in Los Angeles bus students to corporations after school as a result of the entrepreneurial efforts of career advisors in the schools. For example, at one school approximately 20 students are receiving weekly three-hour tours of one company for each of 14 weeks. A second group from the same school is in a second phase of the program and receives on-the-job experience in a job area selected by the student. There are many benefits from such experiences. Youngsters have an opportunity to observe adults at work: how they dress, how they treat one another, how they carry out their assigned tasks, and how they relate to subordinates and to authority. The students learn to use some of the tools employed by the regular employees and generally enjoy themselves and the employees usually enjoy having them around. One girl working in a micro-miniature circuitry room emphasized how much she appreciated the help of the boss. Another young man who plans to go to college to become an architect or a lawyer said that he found the program more interesting and challenging than school. Such observations contributed to the following proposal to create an improved and expanded program of educational work experience.

To extend the work experience program of the Los Angeles School System, some federal agency might commission a study to explore the feasibility of implementing a network of educational work experiences across the nation for the purpose of assisting young people in achieving vital maturation skills and also for the renewal of adults who are already employed.

The emphasis would be on the substantive processes and measures of educational output of the project rather than primarily on input features such as the construction of buildings, equipment, products, etc. The goal emphasis should be on broad interpersonal coping skills aimed at improving motivation and maturation rather than on narrow occupational skills, literacy skills, etc. Too often

new legislation calls for the construction of buildings, purchase of equipment, or the creation of new organizations to reduce illiteracy or unemployment without clearly defining how those resources shall be used to achieve the goals of the program. Although one cannot project the entire course of development of a new program, the initial design ought to start with the intended outcomes and explicitly derive the necessary procedures and resources from an analysis of those outcomes.

The design would include draft legislation that may be necessary to implement the program, for example, financing, management, and operation of the system. It would also include an exemplary system to be developed in one state and would specify criteria and procedures for selecting that state.

The design effort can be supported with a relatively modest investment of federal funds and would serve to draw important issues into sharper focus as the concrete details of the design are made explicit. The design document must, of course, include an implementation plan and a coherent strategy for developing the network. Problems must be identified and research and development efforts planned for the "engineering" of solutions into economically and operationally feasible programs. Even if the sponsoring federal agency did not choose to go ahead with it, the design could serve as a vehicle for enlarging the discussion of national policy on the relationship between education and work.

A number of questions are raised by the above proposal to design a national network of educational work experiences: Why such a bold program? Why work experience? Why don't existing job training programs suffice? Why a feasibility study—why not just implement it? What might be included in the design? Let us consider each of these questions.

1. *Why such a bold program?*

Despite the attractive features of the Los Angeles work

experience program, a relatively small proportion of the students in the district are enrolled. Most students cannot be accommodated due to limited local resources. While the work experience programs attract many students who are planning professional careers, most college preparatory students do not have the opportunity to participate. Yet it is important that all students participate lest the program become stigmatized as a vocational track.

More important, the severity of the youth problem demands dramatic action. Despite escalating demands on education, school boards of the largest districts are occupied more with questions of violence and vandalism than with curriculum. In Los Angeles alone, school violence was said to have reached near epidemic proportions by the chairman of the Los Angeles County Board of Supervisors. Within a six-month period of 1974, he cited the occurrence of five murders on campuses, 306 assaults on teachers, 79 attacks on other employees, and 144 assaults on school security personnel. "There were 629 cases of possession of guns and knives, and 59 instances of bombs or explosives. The dollar loss to the taxpayer for vandalism, arson, burglary, and theft totaled $3,673,682. Thus far in 1974, 80 juveniles have been arrested for murder." [2] The single most important school problem in the United States according to a recent Gallup Poll [3] is the lack of discipline, the unwillingness or inability of the young to accept responsibility and to follow society's rules. Another disturbing symptom is the increase in the adolescent suicide rate, which has nearly doubled in the past decade in California.[4]

2. *Why use the workplace?*

The workplace seems to be the optimal place for the proposed educational work experience program for three reasons: the isolation of the young; the need for adult role models; and the need for responsibility. There seems

to be no alternative institution that can meet all three of these concerns today.

*Increasing isolation of young people* from the important economic institutions of the community deprives them of opportunities to be a part of adult society and results in feelings of importance and alienation and constitutes a serious waste of human resources. The problem is partially due to the present practice of segregating age groups into sequential compartments, first for education, then for productive work, and finally for retirement and leisure.

The isolation of youth is not an evil conspiracy of adults to deprive the young of their rights to participate. Rather, it is the almost unnoticed consequence of the vigorous striving of adults for the comfortable life. As Wynne points out, it is the natural result of our efficient system—"efficient because of the adult time saved from child care—it has increased material productivity by diminishing communal productivity." [5] While adults are busily at work, the young are kept in school for ever longer periods to prepare them and to protect them from the hazards of the real world. We seldom pause to assess the high cost of this "protection." One cost is an increasingly repressive society, another cost is the lack of self-reliance among the young. While adults proclaim their devotion to the young, that devotion is not communicated by tangible sacrifices of the good life in efforts to establish a sense of community.

The workplace is a logical gathering point for bringing young people and adults together again, for that is where the important decisions are made, where the action is, and where contact with influential adults is available. That is where there is the greatest opportunity for the young to assume some responsibility and to see what it feels like. But the young are viewed as burdensome and are relegated to the care of schools and other custodial institutions. They are unable to demand their

rights of membership in the powerful economic institutions of society. They lack the skills and persuasiveness to demand access to such organizations.

*Need for Adult Role Models.* Peer groups dominate school organizations. With custodial ratios of one adult to 25 youngsters, it is very unlikely that adult values will have much impact in those institutions. Besides, most teachers represent a narrow sample of college educated people who chose teaching as a career. They do not necessarily represent models of mature adulthood and do not comprise a broad array of people from widely differing backgrounds. Most teachers have only been students before their teaching careers. They have not been employed in other roles e.g., lawyer, accountant, manager, etc. Yet young people should have the opportunity to interact with men and women from a wide range of careers—it is not sufficient to merely read about what architects and salesmen do. In school settings citizens, trade and professional people have little opportunity to become involved with young people.

Even if we selected widely experienced people to be teachers, school settings would not be a sufficient environment for education because the context in which adults function (the problems, the pressures and realities of the workplace, the informal organization, the physical environments) are all necessary elements for the student to experience "real" life. It isn't enough to have experienced teachers. Students need experienced teachers in context of real situations.

*Need for Responsibility.* Youth must be given early opportunities to assume responsibility affecting others in joint work activities. The basic nutrient of work is the sense that one is needed; there is no other way to gain adult status. In a country where the roles of people in the community are no longer visible to the young, it is especially important that they not be excluded from the workplace. Work settings afford the opportunities for

youth to acquire vital maturation skills such as negotiating with others to protect one's rights, helping others who are less able, seeking help when it is needed, and exercising courage and tact in holding others accountable to group performance standards. It is the lack of such coping skills rather than the absence of academic knowledge that is most responsible for human difficulties in life. Work settings can offer the risk, the challenge, and the mature role models that are necessary for youth to acquire self-reliance and interpersonal skills.

3. *Why will not existing work experience programs suffice?*

Although existing work experience programs furnish gratifying instances of adult employees helping young people they still are in need of fundamental reform.

For example, in the film laboratory, the employee in charge complains that he does not have enough time to help his student employees. In the drafting rooms, the students are trying to help each other figure out what the symbols they were drawing meant; the boss is too busy to stop for explanations. In the instrumentation room, two boys are given vacuum tube voltmeter Heathkits to build to keep them out of the way. The regular employees do not have time to give to the students because they are on a tight schedule. Two regular employees standing in the hall outside the computer room are overheard to say, "There is no room for us in there; we can't do any work with all those kids around." In general, most students observed by this writer were not working on real company work. They were given make-work tasks that run parallel to the normal work being done. There is some accommodation by volunteers who donate their time in explaining to the students what is going on, but that time is in competition with their regular duties and is in scarce supply. It appears that these work stations simply are not designed to accommodate young people. Furthermore, such work experience programs do not provide for

those who have left school and are now working but need opportunities for recurring education.

*Need to Design Jobs for Educational Purposes.* Both work and academic institutions have evolved uniquely age-graded characteristics, and simply exchanging personnel through age quotas, recurrent education incentives, or work experience programs will not do unless both institutions are structurally redesigned to accommodate such exchange. The workplace is now specially designed, through years of incremental changes to exclude the young, and any attempt to incorporate the young may extract heavy costs in reduced productivity. Thus, if students are simply added to existing adult work groups one or more of the regular adult employees will be standing around unable to do their own work. The usual response to this problem is to give young persons parallel make-work or menial work that keeps them out from underfoot and allows the regular employees to get on with their own schedule with minimal interference (and interaction). Volunteer employees donate their time in explaining to the students what is going on, but that time is scarce and in competition with the normal duties of the employee.

To bring young people and adults together in a way that provides an effective learning environment for the young without sacrificing productivity and morale of regular workers requires that specific workplaces be redesigned accordingly. We must go beyond general prescriptions about providing "meaningful" work experiences for youth, but we simply do not know how to design work roles to enhance both material and communal productivity. This is not to deny that in order to teach the important social skills we must provide a sequence of experiences that demand and reward responsible action. But more specific prescriptions are needed.

A good deal can probably be done to lay a foundation for the acquisition of coping skills by having students

operate the school plant and assume work roles in productive school enterprises. The school might, for example, bid on public service jobs in the community; students would benefit according to the success of their efforts in the marketplace. But the "productive" high school is not likely to be sufficient in itself to bridge the gap between school and work. Closer approximations to the workplace will probably be necessary. The crucial questions that must be answered concern the specific design features that are necessary to provide educational work experience for the young. Organized work experience programs are probably better educational experiences than casual part-time work obtained for income purposes. One recent study of work education programs showed students in programs that were specifically designed for educational purposes were more satisfied with their work than comparable students who had simply acquired part-time jobs.[6]

The Manpower Institute proposes a new intermediate agency called a Youth Council to facilitate collaboration between education and the employment communities. They reason that the most serious social problem is presented by youth who are neither in school nor employed. Furthermore, attempts at altering the incentives of school and work sectors on behalf of youth have not met with much success. Consequently, a new community controlled youth council is proposed to champion the rights of youth to gain access to important social institutions. The new agency would be a broker between youth and community resources. The council is seen as a change agent for the reform of education and work structures in the interests of youth and would perform counseling, guidance, and placement functions. Although establishing a new administrative entity is a reform tactic preferred over direct assault on existing agencies, the formation of the new organization does not eliminate the problem of designing meaningful educational work expe-

riences that contribute to the student's skill and courage in changing his own work environment. The design task poses questions that must be answered regardless of whether the responsible agent is an educational institution, an employer, an intermediate agency such as a youth council, or a communal self-help organization such as Synanon.

The main questions, therefore, must be concerned with how educational work experiences can be explicitly designed to achieve a broad class of social skills in students, skills that are valued and sought for their own sake rather than as fortuitous, though welcome, by-products of occupational training. The class of social skills should include both self-control and self-assertive elements. Students should learn to stand up for their rights and to confront others when necessary to correct inequities. They must also learn to make and keep commitments and to assume responsibility affecting others. Some writers refer to these as "affective" skills. Cumulatively, these social skills comprise the attributes that are collectively referred to as "good character" in the mature adult. Such social outcomes are acquired in accordance with the same principles of learning that govern the acquisition of other simpler forms of cognitive behavior and a "curriculum" of work experiences can be designed to optimize their acquisition.

In educational work experience programs, students should advance to higher levels of responsibility as soon as they are able to handle it rather than when they are old enough, have the right credential, or happen by chance to meet the right person. The interactive demands made on students should be carefully escalated to teach the student to cope with a variety of people at different levels in an organization (peers, superiors, subordinates), via different media (memo, face-to-face, telephone), concerning a wide range of topics. Students should also be held accountable for their performance. Where posi-

tive feedback to the students is contingent upon their exhibiting mature behavior, where the incentives reward them for helping others and for asking for help when needed, but where counterproductive and infantile forms of behavior are not rewarded or actively chastised, we can expect to observe with increasing frequency the more adult forms.

Perhaps the educational goals of work experience can be achieved by manipulating job features in response to individual differences among students. Thus, for less mature students job structures can be arranged to provide a planned array of tasks, varying along a gradient of task difficulty and with ample opportunity for nonwork activities with adults. Flexible time schedules can also be arranged to permit free passage back and forth between school and work. The clarity of the work tasks can be enhanced in many ways: performance expectations can be made sufficiently explicit so that the relationship between the job and the total scheme of life of the organization is easy to discern; advancement procedures can be clearly specified and tied to agreed upon standards of merit; ports of entry into the organization and points of control or authority in the organization can be identified for students. The composition of regular employees and of student workers comprising work teams could also be controlled to insure complementarity of abilities and attitudes. For more mature students job structures can more nearly approximate existing features of the workplace.

If a large-scale public employment appropriation is levied, there exists a prime opportunity to convince legislators of the importance of specifying in such legislation that the funds be used to purchase jobs with certain design features to maximize the development of maturation skills in young employees. The effort to accomplish this objective is justified by the promise of restoring in our youth respect for themselves and for others.

*Need for Recurring Education.* If training is an important element in providing skills so that people can have access to job openings, then retraining or recurring education is equally important since most people complete their schooling at an early age and never return, and some jobs become obsolescent and others come into great demand. Our present linear pattern of full-time schooling for as long as one can persist, followed by a sudden transition to a lifetime of full-time work with higher status and earnings for those who can afford to stay in school the longest, is unfair and wasteful of human talent.

Reform proposals[7] to allow students to complete the mandatory portion of their education in early adolescence and giving them a certain number of additional years entitlement to education, usable at any time during their lives, may help to resolve the dualism resulting from the linear "schooling-first" pattern by replacing it with recurring cycles of work and education. This might be accomplished by reducing the mandatory attendance age to 14 years and giving all students an entitlement or a voucher for a certain sum which could be redeemed by any organization that has been accredited by a publicly accountable agency as capable of providing valid education services. The agency would redeem the vouchers, and the students could use their education entitlement at recurring periods throughout their lives whenever it is most needed for retraining. Recurring education would help to solve the problem of age segregation by opening up temporary work experience slots made vacant by adults who are on sabbatical leaves. Young people might help to cover part of the responsibilities previously held by the adults who are off from their regular jobs for retraining.

4. *Why a feasibility study?*

Why not simply implement the program if it is such a good idea? Two important reasons for careful planning are problems of financing and organizational obstacles.

*Available Financing.* If every person in our society, young and old, is to have a choice of attending a variety of educational work experience programs in several organizations during the course of his life, the problem of financing must be resolved. In addition to existing program funds that can be reallocated, local and state educational revenues are logical candidates to assume part of the revenue burden but there are additional candidates. The Comprehensive Employment and Training Act provides public employment funds that are appropriate to this purpose. In a summary of a conference on recurrent education, Mushkin[8] outlines a number of other financing alternatives that may be equally applicable to a program of education and recurrent education via a network of educational work experiences:

- Creating a market for funding loans through banks perhaps guaranteed by the Federal government; such loans to be repaid with interest or out of some fixed percent of future income.
- Tax incentives for individuals and for corporations geared to the amount of private effort or public benefit obtained.
- Expanding social insurance programs financed by employers and employees (e.g., unemployment insurance, social security).
- Establishing a lifetime educational credit plan by a special tax, an income tax, or out of general revenues of the Federal government.
- Company and civic agency in-kind contributions in the form of structural reforms (flexible work schedules, released time, short work week, etc.) that make it possible for employees to participate in the educational work experience programs.

The system for paying the costs of an educational work experience program that is available to youth and adults should be made contingent on an organization's

contribution to the external costs they presently impose on society by excluding certain age groups and by their consumption of education. Organizations that are very exclusive and that depend heavily on highly educated staffs should probably pay more, and equitable procedures for implementation are needed.

On the distribution of funds, those who most need support for participating in educational work experience programs should receive special help, and measures of need should be developed.

Probably the particular form in which the funds are distributed is less important than the contingencies that are used to schedule the amount, frequency, and periodicity of the payments. For example, should more regular, frequent, and greater amounts of money be devoted to work experience programs as a function of need factors, e.g., unemployment rate, occupational shortage, age, sex, race, and population density? Or should greater emphasis be placed on reinforcing effective program performance by giving more support to programs that are most helpful to students, most educationally productive, most efficient, most active in job search and placement? Principles of learning would suggest an incremental approach in which support patterns would successively approximate the goals of the program. It might be possible to analyze the goals of the program and write performance contracts with employers to provide differential payments for a hierarchy of student outcomes so that the achievement of higher level generalizeable social skills results in progressively greater compensation due to their difficulty of accomplishment. There are problems with this, of course, the possibility of creaming for one, the problems of measurement for another, but these comments are meant to suggest directions rather than serving as a prescription of what needs to be done.

Government has a variety of fiscal instruments at its disposal to promote greater opportunity for young people

to participate in educational work experiences alongside adults and these tools can be used in such a way as to avoid runaway inflation, depletion of natural resources, or radical political upheaval.

*Obstacles to Reform.* The creation of a network of educational jobs to be made available to persons of all age levels for the attainment of the objectives of career education comes up against the fact that, as Wirtz[9] has so eloquently put it, "While the case for change is in the minds and hopes of scattered millions, the case for things as they are is in the hands of two or three strongly entrenched bureaucracies." One reason for the difficulty of implementing changes in the workplace to accommodate the young is *self-interest.*

There is a balance of power among vested bureaucratic interests at all levels of education and work, with exclusive control over present arrangements. On the other hand, there is little public pressure for career education reform; only a handful of politically ineffective scholars are interested in the gap between school and work, and few with any power would care to invite a confrontation with those vested groups which have a well-honed ability to defend their turf.

Vocational and manpower training agencies have few productive linkages and considerable duplication, overlap, and conflict as they compete for funding and for control over programs.[10] Programs for youth are numerous and fragmented. There have been endless struggles among administrative bureaus at all levels of government regarding who should control training programs, each with its own constituency, including legislators and special interests who stand to benefit from the program. These groups fiercely defend themselves and occasionally evaluate themselves by carefully selecting contractors who will bring in a positive report with recommendations for additional appropriations.

Educators often express concern that the private sec-

tor may assume too much control over the education process; it has been only a few years since the American Federation of Teachers led its campaign against performance contracting experiments over concern for nonteaching personnel assuming educational functions.

Students themselves are not very eager to move into the community and assume responsibilities in work experience programs. They enjoy the school campus and, aside from its repressive features, find ample opportunity there to become acquainted with members of the opposite sex and to socialize with their peers.

On the work side, employers are generally eloquent at school-industry banquets but when it comes to relinquishing responsibility to young people, they reveal that they don't really trust young people with much responsibility while readily acknowledging that responsibility is precisely what young people need. There simply is not enough responsibility to go around, they say, and besides, "teenagers aren't dependable, aren't mature, aren't well trained," [11]—all the qualities that might be acquired with a little trust and opportunity. Profits come first. Redesign of jobs to accommodate the young is probably a threat to many managers who have not yet even entertained the idea of hiring people under the age of 21.

Union leaders have also been deeply involved in various aspects of career education at the national, state, and local levels. They assume the role of champion of industry-education programs, and yet their actions often seem to be overwhelmingly governed by anxieties over students displacing employed workers.

Licensing and credentialism, often a protective vehicle for the public interest, sometimes stands in the way of reform and serves vested interests in restricting the flow of new labor into the labor market and impedes the mobility of labor within the labor market.[12,13] (p. 160) The use of credentials for effectively practicing age discrimination in hiring makes it very difficult for young

people to gain employment in the primary labor market. If the credential was a genuine indication of proficiency in those jobs for which the credentials were prerequisite, there would be little concern. But Freedman's data on the use of credentials to provide job shelters by limiting the population of admissible job applicants[14] and Berg's data on the lack of congruence between credentials and actual job requirements raises serious questions about the possible social disutility of unchecked credentialism. Most licensing boards are exclusively composed of licensed practitioners with a conflict of interest who are unlikely to voluntarily sacrifice their advantage in the market. But court action such as the *Griggs v. Duke Power Company* case is beginning to challenge invalid licensing and such action is likely to grow.

The effort to overcome these difficulties probably requires that Wirtz's "scattered millions" be organized into a common voice to insist that preventive measures such as a national network of educational jobs be substituted for the usual remedial measures in the youth labor market that never seem to work. People must be convinced that their government has to assume responsibility for bold solutions in the face of opposing self-interest because, "No pluralist society has worked unless its key institutions take responsibility for the common good." [15] (p. 349)

5. *What features might be included in the proposal?*

One feature would be the enabling draft legislation required for the program. For example, legislation will be required for creating a major public employment program to provide the opportunities for educational work experience. Legislation may also be required to fix responsibility for the program. Ideally the program would be administered by a single agency responsible for all its functions whether they be concerned with education, vocation, manpower or labor. A distinct allocation of responsibility and authority might help to avoid the

fragmentation and jurisdiction problems that were cited in our case study and which also typically demand so much attention among bureau personnel in Washington. Finally, draft legislation may be needed to provide for the registration, accreditation, and supervision of educational work experience sites by the 50 states. Education is still a state responsibility and the states would presumably assume the task of regulation and maintenance of educational standards.

A second feature might include the financing procedures to be used. For example, entitlements or vouchers might be used to pay for the educational work experiences whenever they are needed during the person's lifetime; such vouchers to be redeemable at accredited workplaces in private or public sectors.

A third feature might include changes in schools that are necessary to ease the transition to the workplace. For example, as mentioned earlier, productive school enterprises could prepare students for the program. Graduation requirements will also have to include credits to be earned by the educational work experiences. Compulsory attendance laws may have to be modified.

A fourth feature might include the establishment of intermediate community agencies such as the Youth Councils proposed by the National Manpower Institute to augment the guidance and placement functions of the schools and to facilitate the recurring education of adults.

A fifth feature might specify how public and private organizations could set up a department or branch, having responsibility for a productive activity vital to the organization, but that also has an educational responsibility for helping young people develop responsibility and other social skills, and for helping in the renewal of adult workers. This branch or department would probably have an associated research and development capacity to redesign work stations and to "engineer" work experiences to insure that the intended social goals are

achieved. Local educators might be included as part of these research teams to help with such work.

These features are only a start. It has always been impressive to see the number of creative ideas that are generated from the field once a federal agency assumes leadership by setting a direction. Now we need to find an agency that is willing to take on such a risk.

Notes

1. L. McClure and C. Brian, eds., *Essays and Career Education* (Portland: Regional Education Laboratory, 1973).

2. Ray Zeman, *Los Angeles Times*, May 10, 1974.

3. George H. Gallup, "Fifth Annual Gallup Poll of Public Attitudes toward Education," *Phi Delta Kappan*, September 1973, 38-50.

4. Nancy H. Allen, *Suicide in California 1960-1970* (Sacramento: Department of Public Health, 1973).

5. Edward Wynne, "Socialization to Adulthood: Different Concepts; Different Policies." Unpublished draft, 1974.

6. H. F. Silberman, "Job Satisfaction of Work Education Students," *Journal of Vocational Behavior* (in press).

7. ———, "An R&D Program on Career Education," March 23, 1972. Unpublished paper.

8. Selma Mushkin (ed.), *Recurrent Education* (Washington: National Institute of Education, Department of Health, Education and Welfare, 1973).

9. Willard Wirtz, "A New American Prospect," unpublished draft (Washington: The Manpower Institute, May 24, 1974).

10. David Rogers, "Vocational and Career Education: A Critique and Some New Directions." Unpublished paper, 1972.

11. T. W. Gavett, H. R. Hamel, M. Goldberg, and H. B. Kaitz, *Bulletin 1657* (Washington: U.S. Department of Labor, Bureau of Labor Statistics).

12. Myron D. Fottler, *Manpower Substitutions: A Study of New York City Voluntary and Municipal Hospital Systems* (New York: Praeger, 1972).

13. ———, *Manpower Research and Development Projects*, 1973 ed. (Washington: U.S. Department of Labor, Manpower, Administration).

14. Marcia Freedman, *Good Jobs, Bad Jobs: The Search for Shelters* (New York: Columbia University, Conservation of Human Resources, June 1974).

15. Peter Drucker, *Management: Tasks, Responsibilities, Practices* (New York: Harper and Row, 1974).

# II

# Population, Labor Force and Employment Opportunity

Emerging social policy as discussed in the first section is going to have to cope with some major new dimensions of the youth problem. These stem from significant reversals in form in a wide spectrum of matters ranging from alterations in the demographic profile of this country to new patterns of school attendance and labor market participation on the part of young people with corresponding impacts on their rates of employment and unemployment. The three papers in this section present the factual materials which bear on these changes and assess some of their portents.

# The New Worker—Implications of Demographic Trends

*Howard F. Hayghe*

The postwar "baby boom" generation which crowded the school system in the 1950s and 1960s and subsequently swelled the ranks of young workers is moving into the cohorts of mature (over age 25) workers. A new generation of youths, born during a period of declining fertility and rising affluence, is now beginning to enter the labor force. This new generation is smaller. As a consequence, over the remainder of the decade, the number of youths in the labor force will grow more slowly and will decline during the 1980s.

Over the period including the last part of the 1970s and all of the 1980s, the characteristics of the youthful (16 to 24 years old) labor force will change. In response to declining fertility, the proportion who are teenagers will decrease in this period. At the same time, the proportion who are women will increase. Blacks will probably continue to face many barriers to employment even though they, like all young workers, will be better educated.[1]

*The 1970s*

The number of youths in the labor force grew rapidly during the first part of the 1970s, but this growth will slow during the remainder of the decade. Between 1970 and the first half of 1974, the number of young men and women 16 to 24 years old in the total labor force grew by about 2.6 million to reach 22.5 million. During the remainder of the 1970s, growth will be much slower. By 1980, there will be 23.8 million 16 to 24 year olds in the labor force, a net rise from 1974 of only 1.3 million. This increase will be among 20 to 24 year olds, partially offset by a 500,000 decline in the number of teenagers.

The number of young men in the labor force will rise at a slower pace during the latter part of the seventies than during the earlier part. Between 1970 and 1974, the number of young men in the labor force rose by 1.2 million, a 10 percent increase. However, between 1974 and the end of the decade, the number will rise by only 4 percent, due primarily to declines in the number of teenagers. Likewise, the number of young women in the labor force, which rose quite rapidly between 1970 and 1974 (a 17 percent increase), will increase by only 8 percent during the latter part of the decade, a rise concentrated, as with the men, among 20 to 24 year olds.

During the latter part of the 1970s, women will dominate the increase in the number of young people in the labor force. Between 1970 and 1974, the increase in the total labor force was about equally divided between men and women. But, during the remainder of the decade, about 59 percent of the rise in the number of youths in the labor force will be young women. As a result, women as a proportion of the labor force will increase, rising from 40.9 percent in 1970 to 43.1 percent in 1980.

This increase in the number and proportion of women in the labor force reflects current social trends which are likely to continue into the future. Basically, women are having fewer babies than in the past. They are post-

poning their first child and intending to have fewer children.[2] Thus, at the beginning of their careers, young women are able to spend more time in the labor force. As a result, they are able to become better established in their jobs, acquiring job-related skills so that should they leave the labor force for any protracted period to bear and care for children, they are better prepared than women in the past to find jobs when they re-enter the labor force.

The fact that young women are postponing their first child and expressing intentions to limit the number of future births is undoubtedly linked to the changing aspirations of women in our society. The idea that a great many women can best find personal fulfillment outside their traditional housekeeping role is widely accepted. Young women particularly seem to be becoming more career oriented. Thus, it is not surprising to see the labor force rates of these women, even mothers of young children, rising.

Even though the fertility level of Negroes[3] has been declining, it remains higher than that of whites. As a result, the number of black youths in the population and labor force is expected to increase between 1974 and 1980. The number of black youths in the labor force will rise at a rapid pace during this period, on the order of 23 percent, while there will be little change among the whites. Thus, the racial composition of the youthful labor force will be altered—in 1980 14 percent will be black compared to 12 percent in 1974.[4]

As is well known, Negro youths have a high unemployment rate—about twice that of white youths. In 1973, the unemployment rate of Negroes under age 25 was 20.4 percent compared with 9.1 percent for whites. For black teenagers, it was even worse—30.2 percent compared with 12.6 percent for whites. In addition, employed black youths are more likely to be in low paying jobs, while others do not even enter, or drop out of,

the labor force because of discouragement over their prospects of finding a job.

The black youth is often confronted by a series of familial, institutional and economic influences that restrict his ability to compete successfully in the labor market.[5] More often than whites, Negroes come from one-parent homes. In March 1974, 32 percent of all Negro families had a female head, compared with 10 percent of the whites. In over half the Negro families headed by women, children were present. Apart from the psychological effects of being raised in a fatherless home, one serious obstacle confronting children in these families is poverty which forces them to leave school early to seek jobs for which they are not qualified. In 1972, median income for Negro families headed by women was only $3,840 compared with $12,137 for white families headed by a married man.[6] Also, many Negro youths have attended inner city or segregated rural schools, which are often inferior to those attended by a majority of the whites. Finally, racial prejudice continually confronts them in their search for a good job.

These factors are powerful barriers frustrating many black youths. Hopefully, some means will be found to alleviate these obstructions. But, for the remainder of the decade, it seems likely that the level of unemployment among black youths will remain high, and may even rise if our economic situation deteriorates.

To summarize: Over the rest of the decade, the number of youths in the labor force will continue to rise, although at a slower pace than in earlier years. The increases will be among older youths who are generally looking for career type jobs. The proportion who are teenagers, many of whom are students seeking part year or part time jobs, will decline.

Women will become an increasingly important part of the labor force. If current trends continue, the career aspirations of young women will lead them to compete

for jobs in traditionally male dominated industries and occupations. Furthermore, a growing proportion of mothers, with problems unique to their family responsibilities, will also be looking for a place in the labor market.

Finally, the number of young Negroes in the labor force will grow quite rapidly. These young people will be better educated and will have higher expectations than blacks in earlier years. Yet, the barriers to employment which have confronted Negroes in the past remain largely intact, and black youths are likely to experience high, frustrating levels of unemployment. This problem will increase in size as the number of young blacks in the labor force increases.

*The 1980s*

The labor market situation facing the young worker during the 1980's will differ from that of the latter part of the 1970s. As the size of the youthful labor force decreases, competition for starting level jobs in many areas may decrease. However, offsetting to some extent the advantage due to a declining labor force, the pace of economic growth is projected to decrease. The average annual rates of increase of some key indicators are shown below[7]:

| | 1955-68 | 1968-80 (projected) | 1980-85 (projected) |
|---|---|---|---|
| Gross National Product (1972 dollars) | 3.2 | 4.0 | 3.2 |
| Personal Income (current dollar) | 6.3 | 8.0 | 6.5 |
| Employment (count of jobs) | 1.6 | 1.9 | 1.2 |

Educational levels will be a key factor as well. For those whose educational level is below the norm, labor market difficulties may increase due to the fact that the number of jobs requiring only relatively low educational levels will rise slowly. Those workers whose educational

levels are high will be in demand, but, in some areas an oversupply of college graduates may develop, intensifying competition for jobs.

The basic feature of the youthful labor force in the 1980s will be a sustained decrease in the number of youths in the population and hence in the labor force stemming from continuing declines in the fertility rates. Between 1980 and 1985, the decreases will be primarily among teenagers, but in the period 1985 to 1990, they will be among those 20 to 24 years old. By sex, the decline will be uneven; over the whole period, the number of men in the labor force will decline faster than that of women as cultural and social changes continue to promote labor force participation by women.

Between 1980 and 1985, the number of 16 to 24 year olds in the population will drop from 37.5 to 34.4 million. About 77 percent of this decline will be among teenagers. This population decline will be reflected, of course, in a decline in the number in the labor force of about 1.6 million, again, mostly teenagers. The decline will be among white youths while the number of blacks will remain steady.

By sex, the decline in the number will be primarily among men. The number of men will decline by about 1.1 million, or 66 percent of the net decrease in the number of youths in the labor force. The decline in the number of women will be offset by rising labor force participation if current trends in family size and economic aspirations of women continue.

During the latter half of the decade, their population will drop even further, by 2.8 million. However, during this period the declines will be concentrated among the 20 to 24 year age group. Likewise, labor force declines amounting to 1.9 million will be among the 20 to 24 year old group. In the second, as in the first half of the decade, the number of young women in the labor force will decline far more slowly than the number of men.

Because the number of women in the labor force is projected to decline more slowly than men during the 1980s, women as a proportion of the total labor force will continue increasing. As noted before, in 1980 43.1 percent of the 16 to 24 year old labor force will be composed of women; by 1990 that proportion will be 44.4 percent.

Jobs in the 1980s for which the undereducated can qualify, will be growing only very slowly. During the first half of the 1980s, the professional and technical category will grow the fastest, despite continuing declines in primary and secondary education and cutbacks in the demand for engineers. Employment in managerial and clerical jobs is expected to rise as well, but not as fast as in professional occupations. For persons with high school or college educations these developments will be helpful. However, among blue collar workers, operatives and nonfarm laborers are expected to grow rather slowly as technological advances decrease the demand for these relatively unskilled workers.[8] Thus, for the undereducated, employment growth is likely to be in areas in which they are not qualified to compete for jobs.

An examination of projected job openings for the period 1972-1985 shows the same story. Over 61 million openings will occur during this period due to growth and replacement. About 20 percent of this growth will be in professional and technical occupations and 28 percent in clerical occupations, most of which will require at least a high school diploma. On the other hand, jobs in categories such as operatives, and farm and nonfarm occupations which often do not have high educational requirements will grow by only 14 percent.

*Educational Attainment*

The educational level of young workers is expected to rise. By 1990, there will be proportionally more college and high school graduates in the labor force than in

1980. At the same time, the proportion with less than four years of high school will decline rapidly. (However, the absolute levels of college educated persons may differ in the future from the projections in this paper, if, as is possible, the current trend of declining proportions of high school graduates enrolled in college continues.[9])

The 1980s, like the 1970s, will undoubtedly be marked by a rapid pace of technological innovation. Jobs will often become more complex as different technologies and procedures are introduced, requiring well-educated, skilled workers to perform them.

To meet this demand, the proportion of well-educated workers will grow rapidly. In fact, between 1980 and 1990, the number of 16 to 24 year old college graduates will rise by 6 percent (at a time when the number of young men and women in the labor force will decline by 15 percent). The proportion of college graduates will rise faster among women (10.6 percent) than among men (2.8 percent).

Unfortunately, this rapid growth in the number and proportion of college graduates could lead to an oversupply relative to demand in some fields such as primary and secondary education or engineering. The U.S. economy has been successful in the past in absorbing the growing number of college graduates and thus optimism with respect to employment prospects of highly educated workers in the future is warranted. Some attention should be given to this problem to reduce the possibility of the occurrence of the following:

> . . . The recent employment experience of new college graduates suggests that their short-term employment prospects may be quite sensitive to cyclical changes in the economy and to the changing mix of demand for highly trained professional and technical workers in particular fields.
>
> . . . These highly qualified workers may also displace increasing numbers of less educated workers in occu-

> pations which have formerly been the preserve of those without college educations, particularly if the kinds of jobs which typically have been held by college graduates do not increase fast enough to absorb the prospective growth of college graduate jobseekers. The upgrading of job requirements already observed suggests that the employers' expectations with respect to the educational qualifications of their prospective employees tend to rise with increases in such qualifications of the jobseekers themselves. Thus, if college graduates are forced to seek jobs which have not traditionally attracted them, they are likely to be hired in preference to the less educated, quite apart from the actual education needed to perform these jobs adequately. Should such displacement take place on a large scale, the potential consequences could be damaging both to the college-educated workers and to the less educated workers they displace. For the former, limited opportunity to utilize and develop the skills and perspectives acquired in college could give rise to alienation, frustration, and other problems associated with this type of underemployment. For the latter, the prospect of competition with the educationally advantaged for jobs and promotions could also give rise to serious strains.[10]

For young persons whose educational levels are below the norm, the 1980s will be difficult. As noted above, the skill levels required by many jobs will be increasing, and, employment growth will be in those occupational groups requiring high levels of education. Thus, even though their number and proportion are expected to decrease, jobfinding will remain an uncertain proposition for them. They may well find themselves involved in unequal competition for jobs with better educated workers and thus increasingly relegated to low skill, low pay, dead end, jobs.

*Conclusion*

The size and the age-sex-race composition of the youthful labor force are going to change over the next

15 years in response to both fertility trends and the growing labor force participation among women.[11]

For the remainder of the decade, the number of young workers will rise, but more slowly than during the early 1970s. Subsequently, during the 1980s, the number will decline. Over the entire period, 20 to 24 year olds will increasingly dominate the youthful labor force. The proportion who are teenagers will decline, from nearly 40 percent in 1974 to 32 percent in 1985, rising somewhat to 34 percent in 1990.

Current trends of increasing labor force participation among women will continue over the next decade and a half. The labor force participation rates of young women will rise and they will compose an increasing share of the labor force. Also, if current trends continue, a growing proportion of young women will be competing for jobs in the same areas as men.

The number of black youth in the labor force will rise at least until 1980, even though black fertility levels are declining. However, the barriers that are creating high unemployment among them now will continue to prevent success in the job market unless they are alleviated.

Educational levels will continue to rise, but this will present two distinct problems. On the one hand, there may be an oversupply of college graduates relative to the number of jobs in certain fields. On the other hand, jobs for those who are relatively undereducated will probably become less available in an economy where technological progress will remain rapid.

One of the major problems facing manpower policy planners, as in the past, is likely to be the high unemployment rates of black youths. The many social and economic problems confronting Negro youths as they try to find jobs have not yet been significantly alleviated. Thus, a multi-faceted approach will have to be taken to lower the barriers against employment of these youth.

The problems of not enough jobs for *both* the under-

educated youths and college graduates will be unique. Ways will have to be found to steer college students into areas where there will be a demand for workers with college training. Also, should oversupplies of college graduates in certain areas develop, methods will have to be found to channel the excess into related areas.

With the increasing levels of education of the work force combined with the increasing technological level of a great many jobs, the problems of finding good employment for the undereducated will intensify, even though their number and proportion are likely to decline over the period. Programs to educate and train these people will be essential. Compounding this problem is the fact that employers are tending to raise the educational requirements of many jobs higher than what is actually needed to perform the necessary tasks. Thus, it may be necessary to devise some employer-oriented approach to analyze educational requirements of jobs.

It almost goes without saying that the solutions to these employment problems among black youth, college graduates, and the undereducated depend upon our success in maintaining an adequate number of jobs for these young people. If young blacks are to find jobs, if college graduates are to be able to find jobs commensurate to their education and skills, and if undereducated youths are to get meaningful jobs, then manpower policy has to center on creating these jobs.

Women will be an increasing proportion of the labor force. But, as their role in American society is changing and will continue to change, so will their role in the labor force. Young women will be staying in the labor force longer and more young women with children will be working. Further, women are likely to continue to enter male-dominated industries and occupations in search of better pay and better careers. Thus, as the role of women in the labor market changes, they may require new or

different types of assistance than in the past as they seek to establish careers.

Obviously, many of the problems that the changing composition of the youthful labor force will present to manpower policy planners will be familiar ones. However, there will be new problems. In many cases, existing policies and programs may be adapted or rechanneled to help ease the transition of youth from school to work. But, in other instances, different policies and programs may be required.

Notes

1. This paper is based largely upon projections of the labor force prepared by the Bureau of Labor Statistics. See: Denis F. Johnston, "The U.S. Labor Force: Projections to 1990," *Monthly Labor Review*, July 1973, pp. 3-13 and reprinted as Special Labor Force Report 156; also, Denis F. Johnston, "Education of Workers: Projections to 1990," *Monthly Labor Review*, November 1973, pp. 22-30, reprinted as Special Labor Force Report 160.

The assumptions the projections in this paper are based on are detailed in the above. Briefly, they are: over the period of the projection, women will have, on average, 2.1 children (Series E population projections); mortality levels will fall slowly; net annual immigration will average 400,000 persons; the size of the Armed Forces will remain at 2 million; there will be no major legislative or social changes affecting the labor force and no changes in the current definitions of "labor force," "employment" or "unemployment."

2. See, U.S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 49, "Population of the United States, Trends and Prospects: 1950-1990," pp. 12-17, 39-40, 66-68.

3. Data for the category "Negro and other races" is used to represent Negro workers though the data include other minority races. Blacks represent about 89 percent of the larger group.

4. See, Sophia Travis, "The U.S. Labor Force: Projections to 1985," *Monthly Labor Review*, February 1970, pp. 3-12, reprinted as Special Labor Force Report 119.

These are the latest available labor force projections by race.

5. See, Sar A. Levitan and Robert Taggart III background paper for *The Job Crisis for Black Youth*, The Twentieth Century Fund Task Force on Employment Problems of Black Youth, pp. 49-52.

6. See, U.S. Bureau of the Census, *Current Population Reports*, Series P-60, No. 90, "Money Income in 1972 of Families and Persons in the United States."

7. See, Ronald E. Kutscher, "The U.S. Economy in 1985: A summary of BLS projections," *Bulletin 1809*, p. 27.

8. See Neal H. Rosenthal, *ibid*, pp. 18-21.

9. See Kopp Michelotti, "Employment of High School Graduates and Dropouts, October 1973," *Monthly Labor Review*, September 1974, p. 50.

10. Johnston, "Education of Workers: Projections to 1990."

11. Detailed data on population, labor force, employment by major occupation group and educational attainment, current and projected can be found in *Manpower Report of the President*, April 1975, Statistical Appendix, particularly Tables E-1 through E-11, pp. 308-316.

# Youth Employment and Career Entry

*Paul E. Barton*

*Introduction*

The purpose of this paper is a limited one. It is an attempt to provide some perspective on the high teenage unemployment rate, which is the only widely recognized and the only available measure of youth employment problems; how it has gotten so high; and what it means and does not mean. Any such examination leads to a look at labor force behavior as well, to what is happening to youth employment and to the nature of the relationship between the teenage employment experience and "career entry," although teenage employment and "careers" are not, of course, the same thing.

There is no attempt here to prescribe the proper means of readying youth for successful career entry, much too large a subject for one paper. However, there are a number of important considerations arising from the discussion of teenage unemployment and the present character of employment entry which should be kept in mind in shaping a smoother transition from school to work. These will be brought together in the paper.

It should be noted at the outset that this paper almost wholly concerns high school leavers and their early em-

ployment experience, and not that of the college student or graduate.

*Unemployment*

There are several reasons for an examination of the character of teenage unemployment. One is that public discussion of the "youth problem" has been closely tied to high youth unemployment rates and the impact of the World War II baby boom on the labor market of the 1960s.

Another is that the character of teenage employment and unemployment has changed over the years, a matter of considerable significance for policy, often not widely understood, and in fact, frequently misunderstood.

Still another is that during the late 1960s, and in the last several years research on such matters became both more voluminous and more sophisticated. Its conclusions have not, however, been brought together in ways making them easily available for use in policy consideration.

Perhaps the most important reason of all is the need to look at a situation where the most used measure of a problem is not very helpful in policy, and represents a clear case study of a situation where failure to measure the right problems can lead to the wrong policies or simply lead nowhere at all.

1. *The New Teenage Labor Force*

The Teenage Labor Force is Increasingly—And Will Soon Be Largely—an In-School Labor Force

The existence of high teenage unemployment rates has conjured in our minds the image of a school leaver, graduate or dropout, looking for work and unable to find it. There are, of course, many young people in that situation. More frequently however, the youth labor force, whether employed or unemployed, can be identified with young people *in school.*

In 1953, there were a total of 3.5 million teenagers employed. Only one million of them were in school. By

1960 1.7 million out of 4.9 million employed teenagers were in school. A decade later, the *majority* were in school: 3.2 million employed in-schoolers as compared with 2.6 million out of school. The pattern of unemployment followed closely, to the point that by 1970, 0.6 million out of a total of 1.1 million unemployed teenagers were in school and looking for work.[1] The time is coming when teenage employment and unemployment will for the most part be identified with the schooling period of life, rather than reflecting the movement from school and entry into adulthood, as in times past.

The situation is the product of two trends, one well-known, the other probably less so.[2] An ever increasing proportion of teenagers is in school, as more young people finish high school and more of those (at least until recently) go on to college. Thus, even with a constant proportion of in-school teenagers working, the proportion of all teenagers employed who are in-schoolers would be rising.

The talk about the disenchantment of youth with work, high youth unemployment rates, "discouraged workers," the increasing proportion of high schoolers coming from families able to send their teenagers on to college and the rising affluence of the American family in general, may obscure the fact that a *higher proportion* of teenagers who are in school are either working or seeking work.

- 16 and 17 year old males (in school) increased their "labor force participation rate" from 34 percent to 39 percent from 1960 to 1970. For 18 and 19 year olds the rate rose from 35 percent to 41 percent.
- The rise was steeper for females; among 16 to 17 year olds, the rate rose from 23 percent to 34 percent, and from 28 percent to 38 percent for the 18 and 19 year olds.

The surge of a larger proportion of in-schoolers into the

labor force is particularly impressive when we consider that the decade of the 1960's saw the largest increase in teenagers ever, a rise of 47 percent during the decade, which placed a great strain on the capacity of the economy to match the need.

Actually, the proportion of teenagers enrolled in school and in the labor force has probably been understated to a significant extent in the official counts used in the statistics above. In the official survey, whoever is home (often the mother) speaks for the labor force status of the whole family. In the less official but validated longitudinal surveys sponsored by the Labor Department (The Parnes Survey) the youth themselves are asked about their employment status. The statistical variations are significant.

In the Parnes survey of October, 1967, the labor force participation rate of white males enrolled in school, age 16 and 17 was 58 percent, compared to 42 percent in the regular survey, and 56 percent for 18 and 19 year olds compared with 41 percent. The differences were even greater for black males: among 16-17 year olds, 50 percent in the Parnes survey compared with 35 percent in the regular survey, with comparable figures of 61 percent and 31 percent for 18-19 year olds.[3] The differences in the two sets of data are accounted for primarily among the employed, rather than the unemployed. Similar, but smaller, differences also exist for teenagers out of school. Possibly much of the difference is in reporting part-time work thought to be more important, or better remembered, by the youth than the mother.

Such sizable differences suggest that at least for those special surveys concerning youth as a group (such as the October surveys of labor force status of graduates and dropouts, and those enrolled and not enrolled in school) we should be asking the youth what they are up to and not just accepting what the parent is aware of, or wants to report.[4]

The decade of the 1960s saw a remarkable expansion in the teenage population and an even greater expansion of the labor force, creating a pressing demand on the part of in-schoolers for jobs. How well did the economy respond to this double barrelled blast?

2. *The Economy Responds*

Teenage Employment Surged, And The Teenage Unemployment Rate Became Less Useful as a Single Measure of Youth in Trouble

In the 1960s it was the conventional wisdom that the rapidly rising youth unemployment rates and the increasing ratio of the youth rate to the adult rate was the product of the simple demographic fact that the labor supply of 16 to 19 year olds increased dramatically and combined with an economy unable to keep up with it. During this period, the teenage labor force *did expand by 50 percent*, compared to a growth in the total labor force of only a fifth. Moreover, the supply was highly specialized, i.e., inexperienced workers (at a time when it was generally assumed that jobs for the unskilled were disappearing) often looking for part-time jobs at that. Supply outstripping demand was a reasonable assumption to make, as the unemployment rate climbed; after all, the teenage labor force had increased by only 15 percent the previous decade.

Somewhat surprisingly, and not wholly explainable, the economy did quite well in rolling out a greatly increased quantity of jobs for teenagers. The rise in the teenage labor force of 50 percent during the decade was matched by an increase in teenage employment of 49 percent, the latter contrasting with an increase in employment of persons of all ages of just 20 percent during the same period for the Nation as a whole. Further, the expansion in work activity for teenagers was concentrated in part-time work, with an increase of 128 percent from October of 1961 to October of 1971—contrasted with a mere 17 percent increase in full-time work.

But youth *unemployment* rates also rose in the 1960s, and became increasingly higher than the rate for adults. How does that square with the report above about the increase in youth employment opportunities? How concerned should we be that the teenage unemployment rate averaged 14.5 percent, last year, compared with 3.8 percent for persons age 20 and over?

At a time when the teenage unemployment rate is both high, and has been rising over a fairly large span of recent history, the assertion that it is less than useful as a measure of youth in trouble is brash enough to demand a thorough defense. But first, a few comments about what the above statement is *not* intended to say, for it has some exceptions.

First, the major exception: The rates for black teenage youth are more than double those for white teenagers. Moreover, the trend data (1960 to 1972) indicate that the disparity has been widening and is virtually unexplained by the overall state of the economy. In 1960 the rate for black teenagers was 1.8 times the rate for whites. A gradual deterioration brought the black rate to 2.4 times the white rate by 1972. Jobs for black teenagers simply did not grow as fast as the need. Here, *quantity* of jobs in the inner city is a great problem.[5] This higher rate for blacks is a development of crisis proportions, and although generally the unemployment rate for youth is not an adequate measure of the problem, that measure is useful to point up the worsening of the black/white differential.

The other exceptions are minor only in the sense that anything true in general is inaccurate in specifics. Aside from blacks, there obviously are many youth experiencing long spells of unemployment and all the worse for it.

One other point should be made. The examination here is of unemployment rates as trends over the longer term, not of what happens at the depths of a recession. In recessions, the unemployment rate for youth goes up,

although not as much proportionately as for adults. Higher youth unemployment due to recessions is a problem and calls for increasing the quantity of jobs for youth.

The very high teenage unemployment rate does not define the problem very well. It *does* accurately measure "unemployment," and no suggestion is made to the contrary. It is just no longer the major social indicator on which our gaze should be concentrated. A distinction is made between the value of the *unemployment rate* as a social indicator, and the real problem that prolonged *unemployment* causes a lot of youth.

What has happened to the unemployment rate is almost a mirror image of the developments described earlier relating to youth employment. It is becoming common for a teenager enrolled in school to seek a part-time job. Every time this happens, that teenager adds to the unemployment count, even if only for the several weeks it typically takes to be successful.

Given the casual nature of such employment, the teenager is likely to hold several such jobs during the school period. Every time there is a movement in or out of a job, the employment and unemployment rates include it.

Within the school year, teenagers find jobs during vacation periods. For example, 7.0 million teenagers were employed in September of 1973. During December of that year, the number rose to 7.2 million. Many were counted as unemployed while looking for Christmas jobs and employed after finding them.

During the summer teenage employment balloons. There were 9.1 million teenagers employed in July of 1973 (compared to the September figure of 7.0 million). They are counted among the unemployed during the search for summer work.

So what the youth unemployment rate sifts down to is a reflection of the turbulence in teenage labor force activity, with the same youth entering the unemployment

count a great many times during the school years, and indeed, perhaps several times within a single year.

This turbulence is registered in several of the published tables that lie behind the aggregate youth unemployment rate.

It is known how many teenagers enter the unemployment count through labor force entry and re-entry, as compared with those who become unemployed as a result of losing or leaving their last job. The contrast in the make-up of the unemployment rate, by *reason* of unemployment, between teenagers and adults, is considerable, as can be seen from the table below:[6]

UNEMPLOYMENT RATE, 1973

| Reason for Unemployment | 16-19 Year Olds | Males, 20 & Over | Females, 20 & Over |
|---|---|---|---|
| Lost last job | 2.4% | 1.9% | 1.6% |
| Left last job | 1.7 | .5 | .9 |
| Re-entered labor force | 4.3 | .7 | 2.0 |
| Never worked before | 6.0 | .1 | .3 |
| Total | 14.5% | 3.2% | 1.6% |

If one looks only at unemployment resulting from job loss, the rates for youth and adults would not be strikingly dissimilar. The difference lies in the unemployment resulting from entering and re-entering the labor force and is consistent both in years of high and low unemployment. In 1973 (a year of fairly high unemployment), youth entry and re-entry into the labor force accounted for 10.3 percent of a 14.5 percent unemployment rate. In 1969 (a year with a low total unemployment rate) the proportion of the (still high) teenage rate accounted for by such entry and was 8.9 percentage points out of a total rate of 12.2 percent, about the same proportion as in 1973.

The point made by these statistics is a limited one. They show how much the rate is the result of milling about in the labor force. Of course, if there is a very long

period of job search when a youth enters or re-enters the labor force, there is cause for concern.

How long does it take youth to find jobs? Surprisingly, the answer is that nobody knows for sure, despite the wealth of details collected on unemployment. The closest measure available is the information supplied by the Bureau of Labor Statistics on how long *presently* unemployed people have been unemployed. By this measure, the duration of unemployment experienced by teenagers is fairly short. Out of an average of 1.3 million teenagers unemployed in 1972, only 180,000 had been unemployed for more than 14 weeks; 730,000, or 56 percent, had been unemployed from one to four weeks. When the economy is operating at a high level of economic activity, the duration of unemployment is lower. In 1969 the average rate of teenage unemployment was 12.2 percent. This amounted to 853,000 unemployed, of whom 539,000 (64 percent) were unemployed from one to four weeks, and 67,000 for more than 14 weeks. What is "typical" is somewhere between.[7]

An attempt has been made to get a more accurate estimate of the real duration of unemployment than is provided through the monthly unemployment figures. Writing in the *Monthly Labor Review*, a publication of the Bureau of Labor Statistics, Hyman Kaitz provides estimates of actual average duration. Using 1969 data, he concludes that the length of the average spell of unemployment in that year was 5 weeks, compared with the regular BLS measure, which yielded a figure of 8 weeks.[8] Presumably, the duration of youth unemployment is overstated in the preceding paragraph, although we do not know to what extent, compared to the national average. The reason there is a difference in duration, as estimated by Dr. Kaitz, has to do with the fact that the official measure is not of *completed spells* of unemployment during a year, but an average of the monthly count of how long those *currently* unemployed have been without jobs.

Having described a turbulence in the teenage labor force, and (for the great majority) a relatively brief period of job search, an important question remains unanswered. Both of these factors could long have been true of teenagers, when compared to adults. There has long been labor force activity of in-school youth, even if it has increased. Of course, labor force entry accounts for a large portion of youth unemployment: that's the point of being young and starting to look for work. The quickness with which youth do locate work (on the average) lessens concern about the hardship that might be suggested by unemployment rates of from 12 to 16 percent. But what about the fact that the unemployment rate of youth has been growing *relative* to that of adults? The description of labor force behavior provided so far suggests strongly that the divergence between the teenage rate and the adult rate has been due to an increased "milling around" in the labor force compared with the past, and that, therefore, the divergence need not be viewed with alarm. But the evidence supplied thus far is only circumstantial.

Is there information that would show more directly whether the increasing youth unemployment rate (relative to the adult rate) has been due to a growth in short-term unemployment associated with job entry and re-entry? If one takes the length of the unemployment spell to be the best indicator of the seriousness of unemployment, the answer is yes. Using unpublished data supplied by the Bureau of Labor Statistics, a "long term unemployment rate" was derived for teenagers, which is simply the number unemployed for more than 14 weeks as a percent of the teenage labor force. In 1957, the long term rate was 1.6 percent for teenagers, rising to 3.6 percent in the recession year of 1961, dropping to 0.9 percent in the boom year of 1969, and then rising to 2.4 percent in the high employment year of 1971.

The further question was asked of whether the *youth*

*long term unemployment rate* has been increasing as a multiple of the *adult long term rate*, as has been happening in terms of the total youth rate compared to the total adult rate. (So as to avoid the confusion of the effect of business cycles, the high unemployment years have been dropped out.) [9]

| | Teenage Unemployment Rate as Multiple of Adult Unemployment Rate* | Teenage Long Term Unemployment Rate as Multiple of Comparable Adult Rate |
|---|---|---|
| 1957 | 3.1 Times | 2.0 Times |
| 1964 | 3.8 Times | 2.4 Times |
| 1965 | 4.1 Times | 2.7 Times |
| 1966 | 4.4 Times | 2.3 Times |
| 1967 | 4.3 Times | 2.6 Times |
| 1968 | 4.7 Times | 2.2 Times |
| 1969 | 4.5 Times | 2.0 Times |

* Unemployment rate for persons 20 and over.

As can be seen from the table above, the youth long term unemployment rate has not increased relative to the comparable adult rate, as has been true in the case of overall unemployment rates. The rising overall teenage unemployment rate is a product of increasing shorter term unemployment. This is not to say that we should have no concern about the rise, for sensible education and manpower policies can reduce job search time, and a better match between young workers and the job may reduce the frequency of spells of unemployment by reducing job turnover.

The concept of unemployment is much more relevant to situations like the 1930s when most all of those out of work are in dire straits and to the situation of householders responsible for the support of themselves and others. It remains relevant to a large number of adults and *also for many young people* from poor families, or out of school and caught up in a recession. But we should expect it to become less relevant, in general, to a

teenage population that is increasingly in-school, most of whom are being supported by their families, many of whom are probably being told to take the time to get a good job rather than taking whatever happens to come along. Both family and society have extended the period of time for which they assume responsibility for youth and "unemployment" does not very well capture the extent to which those responsibilities are being met.

But to be clear about the thrust of the argument, a point made earlier should be emphasized: the distinction between the unemployment rate as a *social indicator* and the *problem of unemployment.* In judging a social indicator, we ought to be sure that when it goes up the situation is worsening, and when it goes down the situation is improving (or vice versa, as the case may be). The unemployment rate for youth can rise for two reasons. One, because an increase in part-time job opportunities can cause more youth to pour into the labor force, putting the new job seekers through a spell of unemployment, even though short.[10] The second is an inability of youth to find jobs after a reasonable period of search. We remain greatly concerned about the latter condition, but are uncertain what a figure which averages both really tells us, or what to think when it rises and falls.

It might be as useful to know the duration of time between being "able" to work, and the decision to actually seek it as some indication of the changing motivation of youth to work, or the time it takes to find an appropriate training school to learn a job skill after graduation from "general track," or the length of time a high school graduate has to stay in a "leading nowhere" job, before finding the entry rung to a job ladder.

*Career Entry*

Where a "teenage job" ends and "career entry" begins is not a matter that can be dealt with in precise fashion. The extremes are, of course, clear. The distinction

between mowing lawns in the summer and a job as a computer programmer trainee is obvious. While youth unemployment is measured precisely, it is not so easy to describe the trend in the quality of career entry. With a piecing together of disparate statistics and limited studies, however, some general understanding of the present state of affairs is possible.

1. *Teenage Employment, Is It Different?*

   While the Teen Unemployment Rate is Not the Best Indicator of Trouble, Neither Does the High Proportion Employed Indicate That all is Well

It is a good thing that employment opportunities for teenagers have been expanding over the long run. The increasing part time employment of youth in school partially (but sometimes inadequately) meets their needs for independent income and useful activity. It is likely of some help in getting full time work in the period after leaving school (the statistics are rather clear on this.) Such employment may also be viewed as a safety valve in the trend toward a lengthening period of dependent status for youth, as education and family financial support lengthens, all in a period when youth mature faster physically and intellectually.

Not that we should be satisfied with the part-time employment situation as it exists. But such increasing employment opportunity is, on the whole, a good development.

To answer the question posed by the title of this section, teenage employment *is* different, even for those working full-time, and even when they have been certified with a high school diploma. To make the point, a distinction will be made between "youth type" jobs and "adult jobs" or "regular jobs." It is not a precise one, and all jobs cannot be neatly placed into one category or the other. But roughly speaking, the distinction exists, and it is important to recognize it.

This terminology was used by Hugh Folk in 1968, to make a distinction he describes as "useful, if not precise":

> Youth jobs do not necessarily lead to career jobs but are open to young workers. They include baby-sitting, farm labor, sales clerk in variety or food stores, and the like. Typically, these jobs are in non-union firms, small firms, and only infrequently lead to permanent or career employment . . . Both high school graduates and dropouts have occupational distributions that are concentrated in youth jobs immediately after leaving school . . .[11]

Teenagers go into particular occupations and industries that are "teenage intensive," and work their way into the kinds of jobs adults hold as they pass the magic age of 20 or 21. While the right kind of statistics are hard to come by, the concentration can be illustrated. Male high school graduates at age 18 and 19 are concentrated in a wide range of basically unskilled jobs—58 percent were operatives or nonfarm laborers in 1969. Only 27 percent of males with the *same education*, but in the age range of 25 to 44 years, are in these occupations.[12]

When teenagers flood the labor market, as in the 1960s, do they manage to break into more occupations and industries? Or do they just fight for a larger share of the kinds of jobs teenagers are conventionally hired for? The most comprehensive investigation of this question was performed by Edward Kalachek. His conclusion was that as teenagers increase their proportion in the labor force, they are pretty much sealed into traditional teenage activities. In studying ten Standard Metropolitan Statistical Areas, he reported that "teenagers do not significantly increase their penetration of adult-type job activities. Rather, they appropriate a larger share of the jobs in key (teenage) activities."[13] Why are teenagers so confined? Is it that they are looking primarily for

part-time work, which is limited to certain industries? Is the situation similar for out of school youth? Are high school graduates similarly confined, or are they better off than non-graduates?

In raising the question of the access of teenagers to adult-type jobs, the concern is greatest with the school leavers expecting to enter the labor force on a full time basis. This review of the evidence strongly suggests that teenagers are largely held back from adult-type jobs, and that until age 20 or 21 (which is as far as this investigation has gone) a high school diploma (at least for males) makes very little difference in the early years of work experience.

All Bureau of Labor Statistics reports we have seen show graduates doing better in the job market than dropouts. But they lump 16 to 19 year olds together. Our suspicion was that since *age alone* makes considerable difference in employer hiring practices (more on this later), the comparisons would be misleading on this basis, simply because the average age of the dropouts would be less than that of the graduates.

Sample size does not permit comparisons for only 18 year olds, or 19 year olds. However, the Bureau of Labor Statistics was able to piece together a comparison based on 18 and 19 year olds together. As can be seen from the table below, the differences in occupational distribution

Employed 18-19 Year Old Males, 1969

| Occupation | Dropouts | Graduates |
|---|---|---|
| Professional | —% | 3.0% |
| Managers | 1.2 | 2.0 |
| Clerical | 5.2 | 10.5 |
| Sales | 3.2 | 5.8 |
| Craftsmen | 12.2 | 11.7 |
| Operatives | 36.9 | 39.3 |
| Services | 9.3 | 6.5 |
| Non-farm laborers | 26.2 | 18.2 |
| Farm workers | 5.8 | 2.9 |

among boys were small differences in degree, rather than in kind, when dropouts and graduates of approximately the same age were compared.[14]

The high school graduates do a bit better, but the differences are not striking. Both have a characteristic teenage occupational distribution. At the least, finishing high school does not seem to have the pay-off advertised for it in the buses and subways.

A similiar comparison for girls brings out a very important distinction. High school provides girls with a much better access to jobs than it does boys. Girls learn typing and how to spell by staying in high school, and the market for secretaries is a strong one. To illustrate, 60 percent of the female graduates, age 18-19 were in clerical occupations, compared to only 25 percent of the dropouts. The dropouts were much more likely to be in service occupations. But then, a special place is reserved in the job market for women, and these statistics suggest that they are put in their place sooner, rather than later.

The question of what difference a high school diploma makes was explored directly in the longitudinal study directed by Jerald Bachman of the Survey Research Center at Ann Arbor.[15] It involved a national panel of 2,000 boys, starting in 1966, in the 10th grade at the time, and resurveyed every year. The data reported below was based on the 1970 survey.

- After removing extreme cases, the mean weekly earnings for graduates was $112, compared to $119 for dropouts (with all cases included, the dropouts averaged much better than the graduates). Bachman reports this to be consistent with another massive longitudinal survey, Project TALENT, where salaries for dropouts averaged about 4% higher than for graduates.

- In terms of occupational status, the graduates were found to have a slight edge, although not statistically significant.
- When presented with the statement "What I have learned in high school helps me to do a better job," 13 percent of the dropouts said very true, compared with 16 percent of the graduates.

We do know that years of school, and the certification which results, do make a difference in occupational success in later years, although this may be due to credentialing more than to any effect that staying in school longer has on cognitive ability. And, where staying in school longer helps in employment, it may come about because of the personal characteristics that lead the youth to stay in school, rather than schooling itself. However, for males, a high school diploma seems to make little difference in the *teen* years. Either employers are looking for something more, or they simply do not make much of a distinction among young males at that age. The evidence suggests that in the teen years "youth type" jobs prevail, with or without a high school diploma. Female graduates seem to do better than their dropout counterparts, but females as a group have an occupational distribution heavily shaped by stereotyping and discrimination.

So, one looks to employer hiring practices to find out what employers actually do, and what they seem to be looking for. Only in the last few years have there been sufficient investigations to shed much light on the matter.

2. *The Hiring Age for "Regular" Jobs*

   By and Large, Major Employers, Hiring for the Kinds of Jobs Adults Hold, Do Not Want People Under the Age of 21.

The story of teenage employment, how good the jobs are, how well youth do upon leaving school, and what elements make a difference in employment success, has

to be pieced together from a variety of disparate sources. To our knowledge, it has not been done before.

There has, of course, been a lot of talk about the "floundering" period after leaving high school—the holding of a variety of jobs, and the assumption (borne out in the Parnes survey—Volume 4) that such movement is progressive in terms of improving wages. There have been debates about whether the process is good or bad. Some have contended that turnover during these years is the natural result of trying on different jobs to see what fits, the assumption being that *entry level* jobs are there to try on. Others have criticized it, seeing the turnover as evidence that youth are not prepared for a regular job or adequately matched to one during the school years. But an assumption underlying both views was that the youth had some sort of choice, and that not being hired for the good jobs was the result of failure to get a high school diploma, or failure to learn enough even if a diploma were obtained.

This movement from one job to another is consistent with the existence of a set of youth jobs, in gross terms at least, separate from regular jobs held by adults (who are equally, or less credentialed by the education system). If that is the case, then movement from one youth type job to another would be the only way to progress, switching to a better paying job as the opportunity presents itself, and waiting until the minimum age when employers will hire for regular jobs is reached. The evidence available to us indicates that this is the predominant situation, but with many exceptions. We have looked at a number of relatively recent studies of employer hiring practices. In addition, The Manpower Institute conducted its own survey, under contract with the Department of Labor.

The most comprehensive statistical study was conducted by the Bureau of Labor Statistics, with the following results.[16]

Percent of Establishments Not Hiring Under 20 for Full-time Jobs*

| | Office | Non-Office |
|---|---|---|
| Atlanta | 64% | 60% |
| Detroit | 46 | 60 |
| Cleveland | 45 | 48 |
| Baltimore | 56 | 70 |
| Milwaukee | 51 | 55 |
| Los Angeles | 61 | 66 |
| Battle Creek | 61 | 76 |
| Auburn | 49 | 65 |
| Galveston | 48 | 55 |
| El Paso | 66 | 63 |

* The establishments surveyed were those governed by minimum wage laws.

For non-office occupations the percent of firms not hiring teenagers ranges from just under one-half to three-fourths. It is worth noting that the percentages are usually lower for office occupations, likely reflecting the fact that women with a high school diploma are frequently hired immediately upon leaving school for clerical work.

More specific in terms of identifying access to career type jobs, but more limited geographically, is the study by Daniel Diamond and Hrach Bedrosian, of a selected number of jobs in New York and St. Louis that are entry points to a "family of jobs" where there is a line of progression up.[17] Narrowing the focus to such jobs—all clearly requiring no more than a high school education, if that—the study shows the proportion of employers wanting young people is even lower than when a broad range of jobs is considered, although there is considerable variation and differences between the two cities. In St. Louis, none of the hotels wanted to hire persons under 21 for the job of hotel clerk. Ninety-four percent of the banks rejected them as tellers. Two-thirds shunned them

for the lowly job of orderly in a hospital. The best was a job as "press feeder" where 47 percent would not hire them.

The situation was more variable in New York City, ranging from a rejection rate of 85 percent for orderlies down to 25 percent for press feeders. But the banks were also tight with 78 percent not wanting to hire below the age of 21.

These are the big cities. We know of only one such study in a rural setting. A team headed by Charles Rogers surveyed 116 employers in two rural southern counties.[18] Seventy-seven preferred to hire a person who is over 20 years of age. But in terms of actual hiring only nine firms had vacancies a teenager might fill.

Surveys such as those cited led to a study done by The Manpower Institute entitled "Study of Corporate Youth Employment Policies and Practices." The study stated that its central purpose was gaining "a better understanding of whether the youth-hiring decisions of the corporate employer are the result of valid empirical evidence of the job performance characteristics of youth (age 21 and under)." Time available was limited to six months, and the methods used were a search of the literature, a look at relevant Federal and State laws, and interviews with 42 major employers. There were four principal findings:

> 1. The extent to which employers draw employees from the 21 and under age group shows no relationship to the existence of any related personnel policies at corporate headquarters levels. Personnel policies at lower organizational levels are implicit, locally determined, and diverse among the operational components of the same firm.
>
> 2. Employment decisions, except for those affected by equal employment opportunity laws and regulations, are decentralized to relatively low organizational units. As a consequence, detailed employment infor-

mation at the headquarters level is more likely to exist for black or female employees than for young workers.

3. No indication was found that employment decisions relating to youth are formed on the basis of objective, scientific evaluations of the job performance or other employment characteristics of youth. Although some firms maintain absenteeism and turnover data, few factor the data by age, and in no instance did representatives report that such analysis forms the basis of hiring policy. None of the corporate representatives expressed an awareness of studies of youth job performance characteristics.

4. Youth employment decisions appear to be based primarily on subjective assessments by those who make the actual hiring decisions.

The report makes the point that just because hiring policies have grown up which exclude youth and are not based on performance data does not mean that the judgments resulting from experience are necessarily invalid.

But the fact of the matter is that youth are heavily excluded, because of age, and that such decisions by corporations are not based on objective information as to their ability to perform. Headquarters have neither a formal policy nor information on which to base one.

The information developed by The Manpower Institute study is consistent with studies made of the operation of "internal labor markets," most notably those of Peter Doeringer and Michael Piore. Such studies show that hiring policies generally are not validated on the basis of actual performance. Employers have beliefs about age, experience, and educational criteria, but they are not subjected to the rigorous tests reserved for the quality control department, or the detailed record keeping of the cost accountants.

In their study of manufacturing firms, Piore and Doeringer come to the following conclusion:

> Occasionally, the correlation is statistically valid, but most often it derives from the collective experience and prejudices of the plant management and has never been scientifically verified. In either case, the causal relationship between screening variables and job performance is not necessarily well defined. In fact, only in rare instances are managers able to articulate a plausible relationship between job performance and the screening procedures they employ.[19]

Similarly, Ivar Berg, in *The Great Training Robbery*, found that employer policies as to the educational requirements for jobs are usually based on *no* hard information on differences in the performance of graduates and non-graduates, *even in their own plants.*

In any event, it is the fact of their exclusion which must be dealt with as much as the reasoning (or non-reasoning) which lies behind it. What has developed is a situation where the society educates youth, not going on to college until age 17 or 18, and certifies them as ready to join adult society which presumably includes economic society. However, the perception of economic society is that they are not ready to enter until around the age of 20 or 21. Thus, a gap is created that explains a lot about the character of the teenage job experience and behavior. We cannot calculate the rate, but it gives rise to a period where the youth is dislocated from the education system, and not yet located in the employment world, but remains in a youth labor pool, aging and waiting.

Responsibility for this situation cannot be assigned in some neat way. It is likely fairly widely shared. Employers are probably both right and wrong: right in the sense that a lot of youth get high school degrees without the equipment to enter the most significant employments; wrong is the sense that many of them (perhaps most) are ready, and employers have simply practiced blanket policies excluding them, without the benefit of

information that is assumed to go into rational business decision making. Thus, we are dealing with a dual problem of first gaining access for youth who are ready at age 18, and second, better preparing youth to meet valid manpower needs of industry.

There will not be complete agreement that we have identified a problem of sufficient seriousness in the lives of youth to warrant the attention we give it. There are likely to be defenders of the idea that several years in "youth type" jobs is good preparation for work and life.

We should be explicit about our concern. We are questioning the quality of the employment experience in the casual types of employment available until the acceptable age. The youth knows it is a temporary job. The employer knows that the youth will not be staying long. This is not the best context for developing strong attachments to employment, or positive attitudes toward work.

The experience is likely to be disillusioning. The public advertising campaigns have led youth to believe that a high school diploma unlocks employment doors. They have heard, "To get a good job, get a good education," or something to the effect of, "Do you want to be called 'boy' all your life? Get a high school diploma." It has been done in good faith, but the facts are that for the young man leaving school with his diploma, that diploma does not cut much ice in the corporate world.

We would be deceiving ourselves to think that the discrepancy between what he has been led to believe and the reality he finds passes unnoticed. He can see very easily that his job is little different than that of his friend who dropped out in the 10th grade—in fact he may be behind by two years of experience. The message gets back to the schools and is not likely to have a favorable impact on the borderline cases where a youth not going on to college is deciding between finishing or quitting high school.

In all of this full recognition is given to the fact that there is a place for youth jobs and that there are periods of life when they may be preferred. But until some combination of adequate preparation and elimination of irrational hiring standards based on age is achieved, the point is that the *option* to enter an adult job is not there. This should be changed, and then youth left to pick among their options as they please.

*Some Closing Comments*

There has been no attempt here to prescribe appropriate routes for career entry, only to assess the present situation. It should be clear from the foregoing that the present situation is less than satisfactory. Hopefully the facts—and surmises—assembled here will be useful to those trying to improve the situation. There are, however, a few observations to be ventured:

1. Enough has been said about the shortcomings of the unemployment rate as a measure of the "youth problem." What we need are other measures that capture more fully the nature and progression of the youth employment experience. In doing so, 16 to 19 year olds should not be lumped together, in view of the critical difference age makes in the labor market.
2. The record-keeping has not included employer hiring practices toward youth. This needs to become systematic, so we can tell which direction we are moving—and among what kinds of employers.
3. More conceptual and measurement work is needed on the differences between "youth jobs" and "career" or "adult" jobs.
4. Attempts to reform schooling to improve career entry must come to grips with age discrimination. It matters little that curriculum changes are installed in the high school if larger employers do not hire until age 21.

5. The whole of the problem of access to the adult economy must be dealt with. It is the distance between the education world and the employment world that is causing a problem. A meshing of the two at the stage at which society certifies youth as "prepared," is what is required. A promising route to improved access is gradual entry through structured education-experience arrangements.

6. Labor markets for non-college graduates are largely local. Employers vary from area to area in their attitudes both toward youth and toward the kind of education which constitutes appropriate education for employment. Further, attitudes toward such matters vary among employers in different industries.

   To the extent the above statement is true, there is no standard way of educating youth in the classroom for careers. Cost-benefit studies comparing vocational education with general education are likely pointless—except as they may apply to a particular labor area, at a particular time. The structural changes that will prove effective will require assessment of local labor market practices and employer attitudes (including building in means of changing them), and adaptations based on what is learned—as contrasted with single formulas for the Nation.

7. Finally, legal action may—in the end—be found necessary if what seems apparent is proven to be fact on a widespread basis. If employers will not hire 19 year old high school graduates solely on the basis of age, and without tested employment criteria based on ability to perform, then discrimination is being practiced which is not different in kind from refusal to hire older workers—a practice now banned by Federal law.

Notes

1. Data from the 1971 *Manpower Report of the President*, Table B-7, p. 199. The proportion in school is understated be-

cause BLS defines school in such a way as to exclude private schools not offering high school or college degrees.

2. Data from the 1971 *Manpower Report of the President*, Table B-6, p. 198.

3. Herbert Parnes, et al., *Career Thresholds, Volume 2*, (Manpower Research Monograph No. 16, U.S. Department of Labor, 1971).

4. The greater labor force activity found by Parnes raises the question of whether there were differences in employment and unemployment rates also. Employment and unemployment varies from the CPS differently among different subgroups. For 16 to 19 year olds as a whole, the youth reported much higher employment than is recorded in the regular survey, leaving the overall unemployment rate the same for the Parnes and regular surveys.

5. The deterioration in the white/black unemployment ratios for teenagers is dramatic enough to warrant a historical note. Since the beginning of systematic measurement of black/white differentials in youth unemployment, the ratios have been worsening. This was first brought out—using previously unpublished data—in *One Third of a Nation*, a report of The President's Task Force on Manpower Conservation, chaired by W. Willard Wirtz, Secretary of Labor. The chart on page six shows the rates for teenage white males being *higher* in 1948 than for their black (non-white, to be exact) counterparts. The rates followed closely together until the 1954 recession when the black rate climbed sharply above the white rate—reaching roughly a two to one ratio by 1958.

6. *Manpower Report of the President*, 1973, Table A-21, p. 279.

7. Statistics from *Employment and Earnings*, January, 1973 and January, 1970, pages 112 and 131.

8. Hyman B. Kaitz, "Analyzing the Length of Spells of Unemployment," *Monthly Labor Review*, March, 1970, p. 11.

9. Derived from unpublished data supplied by U.S. Bureau of Labor Statistics, and from the 1972 *Manpower Report of the President*, Table A-6, pp. 164-165.

For a historical series on the ratios constructed for 1930-1967, see Harold Goldstein, "Youth in the Labor Market: Trends in Employment and Unemployment," *The Transition from School to Work*, A Report Based on the Princeton Manpower Symposium, May 9-10, 1968, (Industrial Relations Section, Princeton University), p. 35.

10. The volatility of teenage labor force participation in response to opportunity has been documented many times—particularly in the work of Bowen and Finegan, Demburg and Strand, Cooper and Johnston (Bureau of Labor Statistics), and Tella.

11. Hugh Folk, "The Problem of Youth Unemployment," in *The Transition from School to Work*, op. cit., pp. 84-85. The Folk article is one of the earliest to describe the frictional nature of most youth unemployment, and the dynamics of youth labor force behavior.

12. Data on 18 and 19 year old males are from a special tabulation prepared by the Bureau of Labor Statistics. Data on 25 to 44 year old males are from the 1972 *Current Population Reports*, Bureau of the Census.

13. Edward Kalachek, *The Youth Labor Market*, The University of Michigan and the National Manpower Task Force, 1969, pp. 28-29.

14. Special Tabulation made by the Bureau of Labor Statistics. The graduate column contains a small number of 16-17 year olds (44,000). All data are for youth not enrolled in school.

15. Jerald Bachman, et al., *Youth in Transition*, Volume III, (Survey Research Center, University of Michigan, 1971).

16. Thomas Gavett, et al., *Youth Unemployment and the Minimum Wage*, Bureau of Labor Statistics (Bulletin 1615), 1970, p. 75.

17. Daniel Diamond and Hrach Bedrosian, *Industry Hiring Requirements and Employment of Disadvantaged Groups*, New York University School of Commerce, 1970.

18. Charles Rogers, et al., *Teenage Unemployment in Two Selected Rural Counties in the South*. North Carolina State University at Raleigh, 1969, pp. 127-130.

19. Peter Doeringer and Michael Piore, *Internal Labor Markets and Manpower Analysis*, (Massachusetts, Heath Lexington Books, 1971), p. 103.

# Youth Employment Opportunities: Changes in the Relative Position of College and High School Graduates

*Richard B. Freeman*

College training has traditionally been a major route of upward mobility in the American labor market, providing the vast majority of graduates with "high-level" professional or managerial jobs. While persons lacking a college education, such as high school graduates, have not been "shutout" of the top occupations, their chances of attaining professional/managerial positions have been much smaller than those of comparable college workers. In 1960, for example 77.6 percent of college-degree men and 78.5 percent of college-degree women worked as professionals or managers compared to just 22.4 percent (male) and 15.5 percent (female) of high school graduates.[1] The incomes of the college trained exceeded those of high school graduates by approximately 43.8 percent in 1959 —a differential above that in the previous decade.[2] Even in the more detailed (3 digit) occupations college workers did markedly better than their high school peers.[3]

At the outset of the 1970s, however, the situation began to change dramatically, as the market for college graduates weakened, with the salaries and occupational

position of new graduates, in particular, declining rapidly and (presumably as a result) the proportion of young men enrolled in college falling sharply [Freeman, 1974b]. What are the implications of these developments for the employment opportunities of young college and non-college workers in the future? How have these two groups fared in competition for jobs in years past? How are they likely to fare in the future? What does the changing relative position of college and high school graduates teach us about the operation of the market?

This paper seeks to answer these questions, albeit in a preliminary way due to the immediacy of the changes under study. Section 1 summarizes the basic facts on changes in the relative supply and demand for college, as opposed to high school, graduates in the post-World War II period and on changes in relative salaries and occupational position. Section 2 uses the marginal productivity theory of demand to develop a framework for a more rigorous analysis of relative income and employment opportunities. Section 3 examines the extent of intra-occupational competition between high school and college graduate workers and presents estimates of the critical parameters that summarize the interrelation between the demand for the two types of graduates: the elasticity of substitution ($\sigma$) between them, which measures the impact of relative wages; and the elasticity of occupational structure ($\phi$), which measures the impact of relative numbers on job status. The paper concludes with a brief summary of findings and speculations about future employment opportunities.

1. *Developments in the High School and College Labor Markets*

The changing labor market position of high school and college graduates in the post-World War II period and, in particular, in the late 1960s/early 1970s is examined in this section with national data on numbers, salaries, job structure and demand.

To begin with, table 1 records the number of high school and college men graduating in selected years from 1950 to 1973 and estimates of the flow of new job seekers to the labor market (degree recipients less first year enrollments in the next highest level of schooling).[4] The table shows that until the mid 1960s there was relatively little change in the ratio of college to high school graduates, save for the sharp decline following the graduation of the "GI bill" students in the early fifties. Because of the expansion of graduate training, in fact, the relative number of "net" college to high school new entrants dropped sharply in the 1956-66 decade—from 0.44 to 0.17, as the large cohorts of the postwar-baby boom delayed their labor market entrance to obtain additional schooling. At the end of the sixties, by contrast, the relative number of college graduates suddenly increased—from 0.25 to 0.37 according to the data in column (3)—while the relative number on the market also rose sharply —0.17 to 0.31. The lesson of table 1 is that despite the sizeable expansion of college training in the U.S. in post-World War II years, not until the end of the 1960s was there a significant increase in the supply of new college relative to high school graduates and, consequently, significant pressure on the supply side towards a relatively weaker market for young college trained workers.

Table 1: The Changing Influx of Male High School and College Graduates in the U.S., 1950-1973

| | Recent Graduates (in thousands) | | | "Graduates Seeking Work" | | |
|---|---|---|---|---|---|---|
| Year | College Bachelor | High School | Ratio | College Bachelors | High School | Ratio |
| 1950 | 330 | 571 | .58 | 267 | 194 | 1.37 |
| 1956 | 200 | 680 | .29 | 105 | 238 | 0.44 |
| 1960 | 255 | 898 | .28 | 122 | 358 | 0.34 |
| 1966 | 331 | 1308 | .25 | 91 | 521 | 0.17 |
| 1970 | 487 | 1433 | .34 | 172 | 449 | 0.38 |
| 1973 | 550 | 1500 | .37 | 170 | 550 | 0.31 |

a) Graduates seeking work obtained by subtracting first year graduate school enrollment from graduates.

Source: U.S. Office of Education *Digest of Educational Statistics* 1972.

Turning to demand, table 2 records fixed-weight indices of industrial demand for college and high school workers (columns 1, 2), the ratio of indices (column 3), and rates of growth in the period under study. The indices reflect the industrial structure of employment: they are calculated by multiplying the ratio of college (high school) graduate workers to all workers in an industry in a given year (1960) by the employment of each industry for 1949 to 1973, summing across industries in every year, and turned into an index by dividing by the 1960 number. Formally, if $a_i$ is the ratio of college (high school) graduates to all employees in industry i in 1960 and $N_{it}$, total employment in i in year t, the index ($I_t$) is defined as:

$$(1)\quad I_t=(\Sigma a_i N_{it})/I_{60}$$

The fixed coefficient assumption that $a_i$ remains at the 1960 level means that the indices ignore changes in demand due to technological developments within industries and responses to changes in relative wages in order to focus exclusively on *shifts* in demand due to differential rates of industrial expansion. If industries which are "college labor intensive" expand employment more than those that are "high school labor intensive," on average, the index of demand for the former will increase more than that for the latter, and conversely in opposite circumstances. The use of such indices in manpower analysis is developed in detail in Freeman (1974a).

Defined as described above, the indices in the table depict a time path of demand similar to that of supply shown in table 1 with the rate of expansion in the relative demand for college graduates slackening in the late 1960s—after a period of rapid increase. Until 1965, demand for college graduates grew more rapidly than for high school graduates, with a compound annual change in the ratio of demand indices of 1.2 percent (1949-1956); thereafter, the growth of relative demand dropped to

about 0.0 percent per annum from 1965 to 1973, actually falling by 1.9 percent in the 1970-73 period. While other factors also influence the level of demand in the period under study, it is clear that the impetus toward increased demand for college as opposed to high school graduates due to the rapid expansion of "college labor-intensive" industry ground to a halt in the late sixties.

Finally, column (4) of table 2 compares the ratio of the demand indices to supply indices calculated from the data underlying table 1. This shows that relative demand increased in the fifties and early sixties vis-a-vis relative supply and then dropped sharply—by 28 percent from 1965 to 1973. The stage was thus set for a change in the relative economic status of college and high school male workers.

*Salaries and Occupational Attainment*

Given the changes in supply and demand shown in tables 1 and 2, it is reasonable to expect the economic position of college graduates to have deteriorated compared to that of high school graduates in the late 1960s/early 1970s. What effect, in fact, did the changes in relative supply and relative demand have on the salary and employment opportunities of college compared to high school workers? How have recent college and high school graduates fared in the job market?

These questions are examined in tables 3 and 4, which compare the salaries and occupational attainment of all and young or starting college and high school graduates in the period of interest. The income figures in table 3 reveal a deterioration in the relative position of the college trained in the 1969-72 period when supply and demand conditions grew adverse, after a decade of general increase in relative incomes. Among all male workers the income ratio fell by 4 percentage points or 2.7 percent in the 1969-72 period and by seven more points from 1972 to 1973; among workers 25-64, by 7 (4.6 percent) points; while among younger workers, the decline was

especially large: 11 (8.3 percent) points for 25-34 year olds. A similar story is shown by the starting salary data, with the salaries of college men increasing less rapidly than the incomes of production workers for the late 1960s/early 1970s after rising relatively in the previous decade. In short, the figures demonstrate the existence of sizeable downward alteration in the ratio of college to high school salaries—the classic price system response to changes in relative supply/demand conditions of the type shown earlier.

Table 2: Indices of Demand for College Graduates

| | Levels | | | |
|---|---|---|---|---|
| | College Demand (4 yr. grads) | High School Demand | Ratio | Ratio Relative Demand to New Supply |
| 1950 | .76 | .85 | .89 | 0.43 |
| 1955 | .88 | .95 | .93 | 0.90 |
| 1960 | 1.00 | 1.00 | 1.00 | 1.00 |
| 1965 | 1.17 | 1.10 | 1.06 | 1.19 |
| 1970 | 1.41 | 1.27 | 1.11 | 0.91 |
| 1973 | 1.54 | 1.47 | 1.05 | 0.97 |
| 1973 | 1.54 | 1.47 | 1.05 | 0.79 |
| | Compound Changes | | | |
| 1950-1965 | 3.0 | 1.7 | 1.2 | |
| 1965-1973 | 3.5 | 3.6 | —0.0 | |
| 1970-1973 | 3.0 | 5.0 | —1.9 | |

Source: Calculated as described in the text using data from U.S. Census of Population 1960 and U.S. Department of Commerce, National Income and Product Statistics, *Survey of Current Business* (July, various years).

The evidence in table 4 on occupational attainment tells a more complex story about the impact of the changing market on the opportunities of college and high school graduates to obtain white-collar jobs. It shows that *both* groups experienced declines in the probability of attaining white-collar work in the late sixties/early seventies. Among high school graduates, the frequency of white-collar work fell off 4.0 percentage points or 10.5 percent; among college graduates, the decline was more

modest (2.2 points, 2.4 percent) but concentrated in the professional area. Over the longer run, the Census and CPS data in the table reveal a long-term downward trend in the likelihood that high school graduates end up in white-collar jobs but, until the late 1960s, an increase in the relative number of college men so employed. Because of the trend, the fall in the high school position should not be interpreted as a result of the relative "oversupply" of college men in the late sixties, although the changing supply/demand balance could have adversely affected their job position, along lines to be developed in the next section.

Finally, additional more scattered data (not presented in the table) on the occupational attainment of starting high school and college workers confirm the pattern of a decline in white-collar representation among the young. In the class of 1960, 19.5 percent of high school men who did not go on to college obtained white-collar jobs; in 1972, 14.2 percent; this fall was concentrated in clerical, professional, and sales occupations.[5] Among college graduates, evidence for the class of 1971 and that of 1958 reveal a similar pattern: a drop in the frequency of white-collar employment from 91.1 percent to 87.8 percent, with—however—the proportion in clerical and sales positions rising while those in professional and managerial jobs fell.[6]

Table 3: Mean Incomes and Starting Salaries of College Graduates and High School Graduates, 1958-1973

| | 1958 | 1969 | 1972 | 1973 |
|---|---|---|---|---|
| Incomes, Men 25+ | | | | |
| College graduates, 4 years | 7565 | 13258 | 15256 | 15881[a] |
| High school graduates | 5257 | 8827 | 10433 | 11414 |
| Ratio | 1.44 | 1.50 | 1.46 | 1.39 |
| Incomes, Men 25-64 | | | | |
| College graduates, 4 years | 7762 | 13770 | 15625 | |
| High school graduates | 5381 | 9078 | 10740 | |
| Ratio | 1.44 | 1.52 | 1.45 | |

| Incomes, Men 25-34 | 1958 | 1969 | 1972 | 1973 |
|---|---|---|---|---|
| College graduates, 4 years | 6302 | 10777 | 11553 | |
| High school graduates | 4768 | 8133 | 9451 | |
| Ratio | 1.32 | 1.33 | 1.22 | |
| Annual College Starting Salaries[b] | 4620 | 7812 | | 8964 |
| Average Annual Earnings[c] Production Workers | 4056 | 6323 | | 8091 |
| Ratio | 1.14 | 1.24 | | 1.11 |

a) 1973 estimated from percentage change in median income, preliminary report P60.93.

b) Estimated as weighted average of starting salaries of engineers (.25), accountants (.05), business trainees (.40) and salesmen (.20) from Endicott Placement Survey.

c) Obtained from average hourly earnings of private nonfarm production workers (by multiplying by 2080).

Source: U.S. Bureau of Census Consumer Income series P-60 No. 92 March 1974 F.S. Endicott, Northwestern University.

2. *Demand for Labor and Job Competition*

This section uses the marginal productivity theory of demand for labor to analyze the substitution relations between high school and college graduate workers in the economy as a whole and within occupations and on competition for "good" jobs. It focuses on the effect of changes in supply and demand, of the type observed in the late sixties, on relative incomes and on the occupational distribution of the two types of workers relative to salaries.

We consider first a two factor model in which high school and college graduate labor are substitutes. In logarithmic change form, with dots ($\cdot$) above variables reflecting changes, and shifts in relative demand measured by $\dot{X}$, the demand relation between the two groups of workers can be summarized in terms of the standard elasticity of substitution ($\sigma$)

$$(2)\quad \dot{L}_c - \dot{L}_h = \dot{X} - \sigma(\dot{W}_c - \dot{W}_h)$$

where $L_c$, $L_h$ are the number of college and high school workers demanded and $W_c$, $W_h$ their wages respectively. Taking changes in relative supply ($\dot{L}_c - \dot{L}_h$) and in the level of demand ($\dot{X}$) as given, (2) can be rewritten as a relative income equation:

(3) $\dot{W}_c - \dot{W}_h = 1/\sigma\ \dot{X} - 1/\sigma\ (\dot{L}_c - \dot{L}_h)$

which makes relative incomes a positive function of the shift in demand and a negative function of the shift in relative supply, with a magnitude dependent on $\sigma$. If $\dot{X}$ and $\dot{L}_c - \dot{L}_h$ are properly measured and the model is a reasonably valid approximation to reality, the coefficients on the shifts in demand and supply will have the same size but different signs. The greater the substitutability between college and high school workers (large $\sigma$), the smaller will be the impact of shifts in supply and demand on relative incomes and, presumably, the earlier the adjustment to economic changes.

Table 4: Proportion of College and High School Graduates in White Collar Jobs, 1950-1973

| Occupation | Male High School Graduates (Census data) | | | (CPS data) | | |
|---|---|---|---|---|---|---|
| | 1950 | 196) | 1970 | 1962 | 1969 | 1973 |
| Professional | 6.3 | 7.2 | 8.0 | 6.9 | 7.3 | 5.8 |
| Managerial | 16.7 | 15.2 | 13.2 | 16.9 | 15.0 | 13.3 |
| Clerical | 11.0 | 10 3 | 9.5 | 11.0 | 9.5 | 8.7 |
| Sales | 10.0 | 8.9 | 7.9 | 8.0 | 6.2 | 6.2 |
| Total | 44.0 | 41.6 | 38.6 | 42.8 | 38.0 | 34.0 |
| | Male College Graduates | | | | | |
| Professional | 55.7 | 58.8 | 59.1 | 59.7 | 61.1 | 54.5 |
| Managerial | 18.5 | 18.8 | 20.8 | 21.2 | 22.3 | 24.5 |
| Clerical | 6.1 | 5.4 | 4.6 | 5.2 | 3.9 | 3.7 |
| Sales | 8.5 | 8.7 | 8.6 | 4.9 | 6.6 | 9.0 |
| Total | 88.8 | 91.7 | 93.1 | 91.0 | 93.9 | 91.7 |

Source: U.S. Department of Labor *Educational Attainment of Workers*, March 1962, 1969, 1973 Special Labor Force Reports 60, 125, 161 U.S. Census of Population: 1950, 1960, 1970 *Educational Attainment* volumes P-E No. 5B (1958)—PC (2) 5B, (1960) and (1970).

The simple two-factor model of (2)-(3) can, of course, be amplified to take account of additional inputs. With three (or more) factors, the elasticity formula becomes more complex, and the possibility that high school and college men are complements rather than substitutes is opened. While it is still true that, all else held fixed, changes in relative supplies will alter relative wages in

the opposite direction, with other factors changing the opposite could occur. In this paper we focus on the single 2-factor model, on the hypothesis that college and high school have roughly similar relations in production with other inputs or that other inputs are relatively fixed. More work is obviously needed to determine the actual interconnections between our two factors and other inputs and to estimate the relevant parameters of more complex models (see, for example, Griliches (1970); Hanoch (1973); Chinoy (1974) ).

*Intra-occupational Competition*

The occupational structure of employment for high school and college graduates and the degree of competition for "good" jobs can also be analyzed in the framework of equations (1) and (3). In this case we assume that there is a single relative wage in the market and that college and high school graduates are hired in different proportions in various occupations according to the type of activity required and their relative productivity. In some occupations where college skills are necessary, the ratio of college to high school worker productivity will exceed relative wages in the market, so only college graduates will be employed; in others, the presumably greater productivity of the college graduate will not suffice, at prevailing wage ratios, to make their employment profitable, and only high school graduates will be employed; in yet others, both groups will be found, with relative employment set at the point where the ratio of marginal productivity and wages are equal, in the usual manner. Formally, if $\sigma_i$ is the elasticity of substitution between college and high school graduates in occupation i and $R_i$, and index of the extent to which college training is needed, the ratio of college to high school employment will be determined by

(4) $L_{ci}/L_{hi} = R_i\,(W_c/W_h)^{-\sigma_i}$ with $W_c > W_h$ and $0 \leq \sigma_i \leq \infty$.

Since $(W_c/W_h)^{-\sigma_i}$ varies between 1 and 0, if $R_i$ is small the ith occupation will invariably have more high school than college graduates and be "high-school dominant"; when $R_i$ is large, on the other hand, college graduates will—all else the same—predominate unless the elasticity of substitution is close to infinite.

The effect of changes in the relative supply of college to high school graduates in the economy as a whole on relative employment within occupations depends in this model on the pattern of intra-occupational elasticities of substitution among occupations. Occupations with large elasticities will experience great percentage, though possibly not absolute, changes in relative employment while those with small elasticities will experience relatively little change. Formally, differentiating (4) with respect to relative wages and substituting (3) for $\dot{W}_c - \dot{W}_h$, we obtain

$$(5)\quad \dot{L}_{c_i} - \dot{L}_{h_i} = \frac{-\sigma_i}{\sigma}(\dot{L}_c - \dot{L}_h)\cdot$$

If for simplicity, the number of workers in each occupation is fixed, so that $\dot{L}_{hi} = -\frac{L_{ci}}{L_{hi}}\dot{L}_{ci}$ and $\dot{L}_h = (L_c/L_h)\dot{L}_c$,

(5) can be rewritten as

$$(6)\quad \dot{L}_{c_i} = \frac{\sigma_i Y_i}{\sigma Y}\dot{L}_c$$

while the comparable equation for high school workers is:

$$(7)\quad \dot{L}_{h_i} = \frac{\sigma_i(1-Y_i)}{\sigma(1-Y)}\dot{L}_h = \frac{-\sigma_i(1-Y_i)}{\sigma \quad Y}\dot{L}_c$$

where $Y_i = L_{hi}/L_i$ the high school share of occupation i
$Y = L_h/L$, the high school share of the entire work force

To determine the effect of the change in supply on the overall job structure of the two groups, it is necessary to compare changes in all of the occupations, with a metric to value the structure. For present purposes, we divide the work force into two broad categories—"good" (group

I) and "other" (group II) jobs, where the former will refer to professional/managerial and possibly other white-collar jobs and the latter to all other areas. The impact of $\dot{L}_c$ on the job structure can then be measured by

$$(8)\quad \dot{L}_{c1} - \dot{L}_{c2} = \frac{Y_1\sigma_1 - Y_2\sigma_2}{Y\sigma}\dot{L}_c = \frac{\phi_c}{Y}\dot{L}_c$$

the difference is the percentage change in employment in the two occupations, when $\phi_c$, the elasticity of job structure, $>0$, increases in the number of college workers improves the standing of graduates, since the (weighted) elasticity of substitution in good jobs exceeds that in other jobs. The occupational position of high school graduates will be similarly influenced by $\dot{L}_c$ according to

$$(9)\quad \dot{L}_{h1} - \dot{L}_{h2} = \frac{(1-Y_2)\sigma_2 - (1-Y_1)\sigma_1}{Y\sigma}\dot{L}_c$$

$$= \frac{(\sigma_2 - \sigma_1}{Y\sigma} + \frac{\phi_c}{Y})\,L_c = \frac{\phi_h}{Y}L_c$$

where $\phi_h$ is the *cross elasticity* of the high school job structure to $L_c$. The relative change in the job structure, defined as (8) — (9) is just

$$(10)\quad \frac{\sigma_2 - \sigma_1}{Y\sigma} = \frac{\phi}{Y}$$

the *elasticity of job competition* between the two groups.

Although $\phi_c$, $\phi_h$ and $\phi$ are theoretically indeterminate, it is possible to develop some notion of their likely sign in the cases at hand. Since college graduates predominate in the "good" occupations $Y_1$ is likely to be small and $Y_2$ large; if in addition, it is easier, or not too much more difficult, to substitute for college workers in lower-level than higher-level jobs, $\phi_c$ will be negative. Thus, increases in the relative number of college graduates will lead to a worsening in the college job structure. By contrast, the effect of $\dot{L}_c$ on the high school job structure is less clear, for if $\sigma_2 > \sigma_1$, the negative effect of $\phi_c$ may be offset by the positive impact of $\sigma_2 - \sigma_1$ on $\phi_h$. Finally, as

long as $\sigma_2$ is, in fact, greater than $\sigma_1$, the elasticity of job competition will be negative: increases in relative supply will reduce relative occupational structures, as well as relative wages. The principal difference between the impact of relative numbers on occupational structures and wages is the potentially adverse effect on the occupational standing of the group in relatively 'short supply'.

Finally, the model of (8)-(10) can be readily extended to alternative measures of job structure. If occupation 1 is given a fixed-income weight $I_1$ and occupation 2 a fixed-income weight $I_2$ and the position of graduates measured by fixed-weight indices, the index for college graduates would change by[7]

$$(11)\quad 1/\sigma Y\ (W_{c1} - a_c)\ (\sigma_1 Y_1 - \sigma_2 Y_2)\ \dot{L}_c$$

and that for high school graduates by[8]

$$(12)\quad 1/\sigma Y\ (W_{h1} - a_h)\ [(1 - Y_2)\sigma_2 - (1 - Y_1)\sigma_1]\ \dot{L}_c$$

where $W_{c1}$ ($W_{h1}$) — percentage of income earned by college (high school) graduates in occupation 1

$a_c$ ($a_h$) = fraction of college (high school) workers in occupation. Since, by definition of better occupations, $W_{c1} > a_c$, the sign of (11) depends, as in equation (8), on the relative size of the weighted elasticities; similarly, that of (12) depends on the same terms as (9). The generalization to 3 or more occupations is obvious.

To sum up, the analysis of this section directs attention to the interrelated effect of changes in relative supplies on wages and job structure. Following standard marginal productivity theory, increases in the ratio of college to high school graduates are expected, all else the same, to reduce the wages of college workers and raise the wages of complementary high school workers. By contrast, the occupational competition model of (5)-(12) suggests that the increase will reduce high school opportunities in "good occupations", so that their absolute, and possibly relative, occupational position will

deteriorate. The result is a distinct market adjustment pattern of a type given little or no attention in the economics literature, in which the complementary group receives higher wages but an absolutely (and possibly relatively) worse job structure, as a result of increases in the supply of the other group. This form of "bumping" in employment has, of course, been stressed by institutional labor economists as a major adjustment pattern in structured blue-collar labor markets.

3. *Occupational Employment and Relative Incomes*

To what extent do high school and college graduates compete as substitutes in the job market? How does the ratio of college to high school workers differ among occupations and how has the ratio changed over time? What is the magnitude of the critical elasticity parameters $\sigma$ and $\phi$?

This section presents empirical evidence on these basic issues regarding the interrelation between the demand for college workers and the demand for high school workers.

*Intra-occupational employment patterns*

The connection between the occupational distribution of college and high school graduates is examined first in table 5, which records the distribution of 3-digit white collar occupations in 1970 by the ratio of college (4 or more years) to high school graduates, $\lambda_i$. Since the economy-wide $\lambda$ stood at 0.44 in 1970, an occupation can be said to be 'biased' in favor of the college-trained when $\lambda$ is above that value, and conversely when it is below. In the table, occupations with $\lambda$ between 0.2 and 1.0 are labelled as mixed, in the sense that they use a reasonable share of both college and high school personnel; those with $\lambda > 1.0$ are termed "predominantly college" those with $\lambda < 0.2$, "predominantly high school." Only white collar occupations are considered because there are so few college graduates in blue collar areas: $\lambda$ is invariably below 0.20.

Table 5 Distribution of White-Collar Occupations by Ratios of Male College to High School Workers: 1970

Numbers of Occupations and Percent of workers, (in parentheses)

| Predominantly College | Professional Technical Kindred | Managerial | Sales | Clerical | Total |
|---|---|---|---|---|---|
| $\lambda > 5.0$ | 11 (11.5) | 2 (0.1) | 0 (0.0) | 0 (0.0) | 13 (11.6) |
| $5.0 > \lambda > 1.0$ | 9 (13.6) | 4 (4.0) | 2 (0.1) | 4 (0.1) | 19 (17.8) |
| Mixed | | | | | |
| $1.0 > \lambda > 0.5$ | 2 (0.01) | 8 (16.5) | 2 (3.3) | 6 (1.8) | 17 (21.6) |
| $0.5 > \lambda > 0.2$ | 2 (2.4) | 8 (16.4) | 2 (13.4) | 7 (5.5) | 21 (37.7) |
| Predominantly High School | | | | | |
| $\lambda < 0.2$ | 0 (0.0) | 3 (0.0) | 5 (0.0) | 2 (11.1) | 28 (11.1) |
| Total | 24 (27.5) | 26 (36.7) | 11 (16.7) | 19 (18.5) | 80 |

Source: U.S. Census of Population 1970 *Occupational Characteristics* (PC 7-2B).

The data in table 5 show that the bulk of professional occupations are, as one would expect, largely dominated by college graduates and that clerical areas tend to be predominantly high school, while virtually all managerial and sales fields are mixed. As a result of the use of both high school and college graduates in management and sales, nearly 60% of white-collar workers were employed in occupations having $\lambda$'s between 1.00 and 0.20—areas where substitution between college and high school labor is potentially important.

Evidence on the way in which the ratio of college to high school workers actually changed in the white collar occupations and in the overall economy are presented next in table 6 for 1950, 1960, 1970 using Census of Population data and for 1962, 1970 and 1973 using Current Population Survey data. The figures reveal a sizeable increase in $\lambda$ in management and sales, compared to the economy-wide change, and to the change in professional and clerical jobs. From 1950 to 1970, while the ratio of college to high school men increased by 33% in the economy as a whole, it jumped by 79% for managers and 70% for salesmen. From 1970 to 1973, when the college market deteriorated, the ratio rose by 37% (managers) and 35% (salesmen), respectively. The large increases in the relative supply of college workers thus appear to be producing substitutions of college for high school graduates in management and sales—and, as a consequence, a deterioration in the white collar employment opportunities for high school trained men.

Table 6: Changes in the Ratio of Male College to High School Workers in White Collar Occupations, 1950-1973

| | Census data | | | | |
|---|---|---|---|---|---|
| | 1950 | 1960 | 1970 | 1970/1950 | 1970/1960 |
| Total | .33 | .40 | .44 | 1.33 | 1.10 |
| Prof., Tech., Kindred | 3.18 | 3.44 | 3.43 | 1.08 | 1.00 |
| Managers | .43 | .57 | .77 | 1.79 | 1.35 |
| Salesmen | .30 | .41 | .51 | 1.70 | 1.24 |
| Clerical | .19 | .21 | .22 | 1.16 | 1.05 |

| | CPS data 1962 | 1970 | 1973 | 1973/ 1962 | 1973/ 1970 |
|---|---|---|---|---|---|
| Total | .42 | .41 | .45 | 1.07 | 1.10 |
| Professional | 3.64 | 3.62 | 4.13 | 1.13 | 1.14 |
| Managers | .52 | .59 | .81 | 1.56 | 1.37 |
| Salesmen | .47 | .48 | .65 | 1.38 | 1.35 |
| Clerical | .20 | .18 | .19 | .95 | 1.06 |

Source: U.S. Census of Population 1950 *Occupational Characteristics* U.S. Department of Labor *Bureau of Labor Statistics Educational Attainment of Workers* Special Labor Force Reports 30, p. 5, 161.

*Parameter estimates*

The next task is to estimate the critical adjustment parameters identified in section 2—the standard elasticity of substitution ($\sigma$) and the conglomerate elasticities of job structure ($\phi_c$, $\phi_h$) and job competition ($\phi$). To estimate $\sigma$, we have regressed the ratio of college to high school incomes for the years 1956, 1958, 1961, 1964-1973 for which C.P.S. data are available on the ratio of college to high school workers (supply, taken as given) and on the ratio of our fixed-weight demand indices. In a perfectly specified model, the coefficients on these variables would have the same size but different signs and, as (3) makes clear, provide estimates of the inverse of $\sigma$. The actual calculations shown in equation (13) below yield estimates with correct signs and magnitudes that are statistically and absolutely quite similar. According to the equation, the elasticity of substitution between all college and high school graduates is on the order of —2.4 (—1/.46) to —2.7 (—1/.37), which is sizeable but far below the near infinite estimates obtained in cross-country studies [Bowles, 1971] indicating that high school and college workers are reasonably good, but far from perfect substitutes in the labor market.

(13) Ratio of college to high school incomes =
$$\begin{array}{l} -2.46 - .37 \text{ ratio of college to} \\ \quad (.25) \text{ high school workers} \\ +\ .46 \text{ ratio of demand } R^2 = .46 \\ \quad (.11) \text{ indices SEE} = .025 \end{array}$$

where all variables are in log form and numbers in parentheses are standard errors.

Estimates of the parameters of the occupational competition model of section 2 are given next in table 7, which records the results of regressing the relevant measures of occupational position on the ratio of college to high school graduates in the economy and measures of the size of the occupation. In the first set of regressions, the dependent variable is the logarithm of the ratio of high school to college workers in each occupation and size is the share of the occupation in the total work force. The coefficient on the ratio is the relative elasticity of substitution: it is 1 when the occupation has the same elasticity as the aggregate $\sigma$ and is greater or less than one when it is more (less) easy to substitute the two kinds of workers. In the second and third set of regressions, the dependent variables are the logarithm of the odds ratio of being in the occupation—log $(H_i/(1 - H_i))$, for example—while the scale variable is the log odds ratio measure of the size of occupation i; the second set deals with high school graduates and the third with college graduates, yielding $\phi_h$ and $\phi_c$, respectively, and estimates of $\phi$ by subtraction.

The major advantage of the model is that it allows us to estimate the critical substitution, occupational structure and competition parameters with a minimum of data—in particular, without relative wage information that is often marred by measurement error. Moreover, in a labor market where non-wage searching or queueing may be important adjustment mechanisms, the model captures the entire substitution effect within occupations due to changes in relative supplies, not just that part of the effect that operates through the wage structure. On the other hand, it is important to recognize various problems with the calculations: they deal solely with two factors of production and might be altered by allowing for other factors; they ignore entirely the female work

Table 7: Estimates of Occupational Substitution and Structure Parameters: White Collar Occupations 1959-1973[a]

Parameter Estimates and Summary Statistics

| | $\sigma_1/\sigma$ | size | $R^2$ | $\phi_h$ | size | $R^2$ | $\phi_c$ | size | $R^2$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. Managers | 3.68 | —1.05 | .77 | —.40 | 1.08 | .97 | 1.92 | .27 | .50 |
| | (.77)[b] | (.60) | | (.10) | (.07) | | (.64) | (.43) | |
| 2. Professionals | .47 | —1.87 | .71 | —.67 | .88 | .96 | —2.12 | .22 | .81 |
| | (.18) | (.40) | | (.17) | (.06) | | (.35) | (.14) | |
| 3. Clerical | .47 | —.06 | .11 | —.47 | .88 | .89 | —2.12 | .51 | .50 |
| | (.61) | (.63) | | (.18) | (.18) | | (1.04) | (1.00) | |
| 4. Sales | 3.96 | .23 | .88 | —.59 | 1.05 | .76 | 1.11 | 1.40 | .70 |
| | (.76) | (.61) | | (.30) | (.22) | | (.93) | (.70) | |

a) Years 1960, 1961, 1963 omitted due to lack of data; all regressions included constant term not shown in the table.

b) Numbers in parentheses are standard errors of estimates.

force and male/female substitutions and also the age structure of supply and old/young worker substitutions; they are based solely on time series data and presumably could be augmented and improved by cross-section (state, SMSA, county) evidence. On-going work will, hopefully remedy some of these errors of omission.

The regressions in table 7 tell, in any case, a clear story about the impact of the increased supply of college men on the educational profiles of occupations and the opportunities of high school and college graduates.

First, the estimates of relative elasticities of substitution show that, as expected, high school and college workers are relatively good substitutes in managerial and sales occupations and quite imperfect substitutes in professional and clerical jobs. The coefficients in lines 1 and 4 indicate that relative elasticities are on the order of four in the former two occupations, and about ½ in the latter, with the coefficient on clericals insignificantly different from zero. There are also, it turns out, quite different scale effects among occupations, with professional and managerial coefficients between one and two, indicating that rapid growth (increased demand) in these occupations is likely to involve greater increases in the employment of college than high school workers.

Second, the occupational structure parameters for high school workers estimated in column 2 are uniformly negative and generally significant, indicating that increases in the relative number of college graduates pushes high school workers out of the four occupations under study. The estimates clearly suggest a substantial depressant impact of the late 1960s growth of the college work force on the white collar employment opportunities of high school men.

Third, by contrast, the estimates of $\phi_c$ in column (3) show a mixed pattern, with professional and clerical occupations obtaining negative elasticities and managers and sales positive estimates. According to these calcu-

lations, increases in the relative number of college graduates *reduces* the probability of being in a professional job while *increasing* that of working as a manager or salesman, apparently by the substitution of college for high school workers.

Finally, subtraction of the estimates of $\phi_h$ from $\phi_c$ to obtain the elasticity of occupational competition ($\phi$), which measures the *relative* change in the job structure of the two groups, shows that (in accord with the direct estimates in column 1) elasticities of substitution between high school and college workers are quite large in the management and sales occupations and relatively small in professional and clerical occupations. [Recall that the sign of $\phi$ depends on $\sigma_2 - \sigma_1$, and is negative when substitution possibilities are greater in the particular occupation (occupation 1) under consideration than elsewhere and positive when the elasticity of substitution is less. In the table $\phi = -2.31$ and $-1.70$ for managers and salesmen and 1.45 and 1.65 for professionals and clericals, respectively.]

*Conclusion*

The findings of this study can be summarized briefly:

1. The supply/demand balance shifted against college graduates in the late 1960s, with the consequence that their income relative to that of high school graduates fell.

2. The job structure of college graduates also deteriorated in the late 1960s/early 1970s, as more graduates ended up in nonprofessional, nonmanagerial positions. At the same time, however, the fraction of high school workers in white collar positions also fell, presumably as a result of the relative excess of more qualified college men.

3. Both the change in relative incomes and in occupational structures can be understood in the context of a single labor market model of income determination and occupational competition. Estimates of the critical parameters of the model—the elasticities of substitution and

the elasticities of job structure and competition—reveal considerable market responsiveness to changes in economic conditions: on aggregate elasticity of substitution between all college and high school workers of between —2.3 and —2.7; relative elasticities of substitution within occupations ranging from nearly 4 (sales, management) to less than one-half for professionals and clerical workers.

4. The parameters measuring the impact of changes in relative numbers on the occupational composition of a group—the elasticities of job structure—defined in terms of particular occupations vis-a-vis all others—show further, that increases in the relative number of college graduates reduce the proportion of high school men in sales, management, professional and clerical occupations, while raising the proportion of college men in sales and management. In short, an "oversupply" of college men acts to push high school men out of white collar areas.

The implications for the future is that continued increases in the relative supply of college graduates can be expected not only to reduce college to high school income differential but also to lower the job status of both groups. In terms of relative income, high school graduates benefit from the increased supply of complementary college workers; in terms of white collar employment opportunities, they will suffer absolutely and possibly relatively as well.

Notes

1. These data are from the U.S. Census of Population 1960, *Educational Attainment* PC(2)-58, Table 8.

2. The text compares the median income of men with 4+ years of college to that of men with 4 years of college from U.S. Census of Population 1960, *Educational Attainment* PS(2)-5B, table 5. In 1949 the comparable ratio from the Census volume was 34.2 percent.

3. Within detailed occupations, college graduates earning 10-30 percent more than comparable high school workers, according to U.S. Census of Population 1970 *Occupation by Earnings and Education*.

4. Because of difference in the economic status of male and female workers, ranging from differential participation rates to income, we focus exclusively on males in this paper. Clearly, a complementary study should be undertaken dealing with female workers and male/female competition.

5. Evidence on the position of new high school graduates is given in BLS reports, "Employment of High School Graduates and Dropouts," (various years).

6. See Freeman (1974b).

7. The index is $I_{a_e} + I_2(1-a_e)$ and the logarithmic difference
   (a) $W_{e1}(L_{e1} - L_e) + (1 - W_{e1})(L_{e2} - L_e) = L$
   (b) $W_{e1}(L_{e1} - L_{e2}) + L_{e2} - L_e =$
   (c) $W_{e1}(L_{e1} - L_{e2}) + L_{e2} - (a_e L_{e1} + (1-a_e) L_{e2}) =$
   (d) $(W_{e1} - a_e)(L_{e1} - L_{e2})$

but substituting (8) yields the expression in the text.

8. The derivation is similar to that for (11).

## References


Bowles, S. *Planning Educational Systems for Economic Growth.* Cambridge: Harvard University Press.

Chinoy, P. P. Unpublished doctoral dissertation, Harvard University.

Freeman, R. "Manpower Requirements and the Skill Composition of the Work Force" in National Science Foundation, *Manpower Forecasting*, 1975.

———, "Overinvestment in College Training?" *Journal of Human Resources*, Summer 1975.

Griliches, Z. "Capital Skill Complementarity," *Review of Economics and Statistics*, Vol. 51, No. 4 (November 1969).

Hanoch, G. "Production and Demand Models with Direct or Indirect Implicit Addivity," *Econometrica*, Vol. 43, May 1975.

U.S. Department of Commerce. Bureau of the Census. *United States Census of Population, Educational Attainment, 1950, 1960, 1970.*

———, Bureau of the Census. *United States Census of Population, Occupational Characteristics, 1950, 1960, 1970.*

———, Bureau of the Census. *Consumer Income*, Current Population Reports, P-60.

U.S. Department of Labor. *Educational Attainment of Workers 1962, 1969, 1973.* Special Labor Force Reports Nos. 30, 125, 161.

U.S. Office of Education. *Digest of Educational Statistics, 1972.*

# III

# The Role of Labor Market Information

Moving more specifically to the matter of labor market information for youths we come up against some of the following questions: What kinds of information are we talking about? What is there in theory which provides viable hypotheses concerning the relationship between labor market information and labor market performance? What does the empirical evidence demonstrate? What indeed are the criteria for assessing such evidence? These and related questions are encountered, commented upon and evaluated in this section's two papers which also made suggestions for further research and action in this arena.

# Improved Labor Market Information and Career Choice: Issues in Program Evaluation

*Lois-ellin Datta*

An evaluator studying how improved occupational information helps youth make better career choices encounters four problems: lack of a unified theoretical framework explaining the reasons for poor career decisions and why better information should yield improved outcomes; lack of a research base describing the extent of the problem; lack of explicit consistent statements on what a better career choice would be; and lack of information on how directly and durably labor market information affects the outcomes sought. These problems, added to the technical limitations of measures of career development, suggest that programming has outstripped ability to evaluate program effectiveness.

Work in progress may reduce the conceptual problems and improve the state-of-the-art of measurement. Issues in program evaluation should temper, however, expectations regarding documentation of the benefits of improved labor market information for the career choices of youth. These issues are examined in the following sections on problems in designing evaluations of occupa-

tional information systems, possible approaches to evaluation of programs intended to improve career decisions, and work in progress.

1. *Evaluation Problems Arising from Limitations in Theory and the Research Base*

a. Theory. Most evaluators prefer some theoretical framework, demonstrating the need for improved occupational information, how it functions to help people, and what the likely outcomes are. The problem in this instance is not a lack but rather the plethora of theoretical models relating occupational outcomes to education, family background, or personal characteristics [Osipow, 1968; Ginzberg, 1971; Jepson and Dilley, 1974].

None of these theoretical models have formally specified how much of what kind of occupational information is required for what outcome. None has systematically examined the functions of improved occupational information or predicted effects of additional information.

Three broad approaches to understanding the relations among family, schooling and occupational outcomes are represented in the theoretical literature. First, economic models usually are predicated on the assumption that people making career decisions weigh opportunity costs against probable income or status returns from further education. This suggests that the most important occupational information is extensive, very accurate economic data on status or income increments associated with various amounts and types of human capital investments. It also suggests that people without such information will be severely limited in their ability to make decisions that optimize the returns on whatever investment they decide to make in further education.

Economists disagree among themselves, however, about the true relation of education to career entry and progression, and about whether changes in the supply side of the labor market, such as changes in educational levels, will have rapid consequences on the demand side and

thus on outcomes in the labor market. Some hold that changes in the supply of human capital will be quickly and accurately reflected in the demand for labor. Others contend that the value (wages) of labor is determined much more by influences in such forces as job structures and labor market practices than the amount of training or education that the workers bring to or acquire in the labor market. One might assume such differences among economists would influence what information would be regarded as accurate and complete data, how they would recommend such information be interpreted, and the predicted extent and durability of effect of improved information on various labor market outcomes. These consequences have not, however, been specified in economic theory in detail sufficient for evaluation (or program) design.

Second, sociological theorists examine the social conditions associated with variables such as family socioeconomic status, sex and ethnicity to understand how these influence occupational educational aspirations, expectations and attainments. To date, these studies offer scant guidance on what occupational information would improve career decisions or other outcomes. They do, however, provide clues as to who most influences career choices for individuals differing in economic background, sex, ethnicity and early career interests. The data point to parents and friends rather than to teachers and counselors as the "natural" avenues through which improved information could have an effect. Teachers and counselors are apparently more influential for blacks than for whites, suggesting the importance of adapting both information and delivery systems to present channels of influence. Analyses in this area recently have focused on examining relationships among major variables (peers, schooling, family) in explaining how attained status develops.

Third, there are psychological theories of career choice

and decision-making. These emphasize motivational and personal traits at various stages of the decision-making process and the role of individual values, attitudes and goals in influencing rate of progress through stages. While some psychological theories are nonlinear, most are concerned with the characteristics of individuals during different stages or conditions of career awareness, exploration and choice and with how individuals move from one stage to another.

The economic, sociological and psychological theories are concerned with different aspects of the relation between the worker and the labor market. Within each discipline there also are often competing and, occasionally, complementary theories in which occupational information is of variable importance to career outcomes. Few theoretical studies use similar variables measured in similar ways for predictor, process or outcomes. Most important for present purposes none has explicitly addressed the impact of improved labor market information for youth, although almost all theories have been based on data from students and younger workers. The evaluator thus finds many statements of how occupational choices get made or who influences outcomes, but little help across the relevant theoretical domains or in the predictive literature regarding what kind and how much occupational information will be necessary, and what, if anything, will be sufficient for what outcomes.[1]

b. Empirical studies. Evaluators prefer a research base describing the extent of the problem and giving reasonable assurance that the variable chosen as an intervention is related to the outcomes defining the problem. The research data base on occupational information is thin. Until 1966, there were no national probability sample data on what teenagers knew and did not know about the labor market. Three studies are now available: Bachman [1972], Prediger, Roth and Noeth [1973] and Parnes and Kohen [1973]. The National Assessment of

Educational Progress collected extensive career education data in 1972; reports of this study should be available in late 1975. Because of the extensiveness of the data and the representativeness of the sample, the Prediger et al. findings will be discussed in more detail than the other reports.

Prediger, Roth and Noeth [1973], writing from a psychosocial framework, describe occupational information data collected in Spring 1973 from a nationally representative sample of about 32,000 eighth, ninth, and eleventh grade students in 200 schools. They examined occupational awareness, occupational preparation, exploratory occupational experiences, self-awareness, career plans, and perceived needs for help with career planning and decision-making.

Prediger et al. conclude that almost all students urgently need better occupational information and help in making career decisions.[2] They found that 78 percent of the eleventh grade students sampled wanted help in making career plans. This was a higher percentage of requests than for any other category. The need for help in making career plans *increased* while needs for help in the eight other areas *decreased* from eighth to eleventh grade.

The need for intermediary services was reflected in other survey responses. For example, although 55 percent of the eleventh graders have given "a lot" of thought as to why their first two job choices are right for them, 59 percent did not know where to begin in moving forward their own career goals or had only some idea of how to prepare for their own first choices of careers: 34 percent were unsure of the amount of education required for their choices and 68 percent were only fairly sure or were unsure of their career choices.[3] With regard to career planning knowledge, 61 percent of the eleventh grade students believed the earlier the better in choosing a life work, 61 percent believed most persons remain in

the same jobs throughout their adult lives, and 43 percent believed unemployment rates are lower for youth than adults.

The American College testing program report concludes:

> . . . student expressed need for help in career planning is in sharp contrast with the amount of help students feel they have received. This discrepancy is reflected in what students have (and more often, haven't) done to prepare for the difficult career decisions they face. Lack of knowledge about the world of work and the career planning process also testifies to their need for help. Considered together, we believe these three vantage points for viewing students' career development provide a consistent and dismal picture. If we were speaking of physical development rather than career development, we would describe American youth as hungry, undernourished and physically retarded. [1974, p . 33]

Similar conclusions were reached by Parnes and Kohen [1973] writing from the perspective of economic theory, based on data for male high school dropouts from a national longitudinal study. In their study, occupational knowledge is defined by accuracy in selecting pay differentials for various jobs and the educational requirements for these positions. Their findings point to substantial lack of information about economic returns and educational requirements. Their report also is particularly informative in showing the effect of parental socioeconomic status, student level of performance on measures of intelligence and ethnicity. White males from families of higher socioeconomic status with high levels of intelligence test performance had substantially more information on the occupations measured by the Parnes' questionnaire.[4]

One consequence for evaluators of the thin empirical base is that comparison data on occupational knowledge

for subgroups are scant or nonexistent. Age seems to be a factor. Prediger et al. [1973], Westbrook and Parry-Hill [1973] and others have found differences by grade level or chronological age on almost every scale at least between the ninth and twelfth grades. The shape of the curve of acquisition of occupational information after the twelfth grade is, however, unknown. Sex differences in occupational information are less frequently reported, and, if anything, favor women. Prediger et al. [1973] report that girls scored higher on every item but one on their occupational knowledge scale. On other scales girls also scored slightly higher than boys. With regard to ethnicity, as noted above, Parnes and Kohen [1973] reported that minority youth had substantially lower scores on occupational information than majority youth. Social class, as a fourth variable, appears to distinguish quite reliably among youth with higher and lower occupation information scores.

While these reports have expanded what is known about occupational information or lack of it in subgroups of young people, evaluators would prefer a more extensive empirical base, particularly with nationally representative samples, and large enough groups to permit reliable comparisons by subgroups.

A second aspect of the thin research base is that almost nothing is known of the relationship between occupational knowledge during adolescence and either short-term or long-term outcomes. The score is one no, one maybe, and two yeses.

One study yielded negative results: students with higher scores on the Crites Career Maturity Inventory had higher unemployment rates and lower hourly wages than students with lower scores on the inventory. Another study showed no effects. According to Darcy, Kauffman and Milker [1974], "world-of-work understanding, attitudes, education-related and employment-related behavior" taught in an eighth grade one semester

course on economic education was not associated with wage rates or weekly wages five years later (eight months after high school graduation) for youth in the labor force among a cohort of 645 young men and 242 young women. Only labor union membership was associated with higher wages.

Two studies report positive effects. Parnes and Kohen [1974] found that for young men who dropped out of high school, information about (1) wages earned in various occupations, (2) the content of different jobs, and (3) educational requirements were correlated with employment vs. unemployment and with hourly wages five years after high school.

Cuoney and Hoppock [1954; 1957] found that immediately after graduation, 35 senior students in a high school course on job finding and job orientation were better satisfied with their jobs and earned more money than control and comparison groups. Five years after graduation, the superiority of the experimental group was maintained and, if anything, increased in terms of unemployment/employment, job satisfaction, and yearly income.

Interpretations of these four sets of findings may depend on (1) the measure of occupational information used: career maturity, broad world of work knowledge, details of wages and requirements for different jobs, etc.;[5] (2) on the nature of the sample; (3) on the original range of knowledge of the sample; (4) on the times when knowledge was assessed and outcomes measured; (5) on the outcomes studied; or (6) on various combinations of these factors. The experiments required to examine alternate explanations of the relationship between occupational knowledge and labor market information have not been done. Little is known about the minimum amount or types of occupational information that are necessary or sufficient for short-term or long-term outcomes or about the value of additional occupational

information for the student.

Another methodologically significant aspect of these studies is that the criterion usually is employment and wages. Yet the students' own values seem to place "interesting jobs" higher than "money." Johnston and Bachman [1973] report that among male high school students interviewed in the tenth, eleventh, twelfth grades, and one year beyond high school, challenge was held to be very important among those youths who later enter post-secondary education. Others, such as workers and those who later entered military service, rated job challenge as only moderately important at the beginning of the tenth grade. By high school graduation, they rate challenge almost as important as did later college entrants. Among those who were unemployed a year after high school, interest in job challenge climbed between the tenth and eleventh grades, but "plummeted as they failed in the job market" [p. 12]. Job payoff was rated as very important by all the young men; among the college entrants, however, there was a steady decline in importance.

The importance of challenge is apparently affected by labor market experiences, which, according to Johnston and Bachman are themselves affected by family socioeconomic status and performance on measures of intelligence. These findings argue that employment per se rather than the quality of employment may be a better criterion for youth from low-income families.[6]

On the other hand, as Folk [1968] and the Department of Labor [1972] observe, the relevant economic outcome of improved occupational information for youth who are not continuing post-secondary education is not whether or not a young person has a job or how much it pays, but whether the job is a youth job or a career job.

Folk comments,

> Youth jobs do not necessarily lead to career jobs but are open to young workers. . . . Such jobs are open to

> youth because they require little in the way of experience, training, education or responsibility. Career jobs, in contrast, are the first rungs on job ladders that lead to good jobs. . . . Both high school graduates and dropouts have occupational distributions that are concentrated in youth jobs immediately after leaving school. The longer the period since leaving school, the more adult the occupation becomes. [pp. 84-85]

Considerable caution should be exercised in selecting evaluative criteria and institutionalizing their use in studies of occupational information, particularly in the absence of either theory or fact showing why employment or wages should increase directly with improved occupational information. The criteria a field chooses for itself in its early studies cannot easily be disavowed later if negative findings come in, as the experience of early childhood programming and the use of later achievement test performance IQ scores as the primary criteria of program success has shown [Hodgson, 1973; Riecken et al., 1975].

c. Effect of occupational information on career choice. A third reason why the knowledge base seems weak to an evaluator is that with one exception, there are few studies relating occupational information to changes in individual career interests, choices or plans. One study, by Zener and Schnuelle [1972] shows that after taking the Self-Directed Search, male high school students narrowed slightly the occupational areas they were considering while women slightly increased the occupations explored. These findings were interpreted as favorable, since men began with slightly more occupations being considered and women with slightly fewer. Nolan [1973] and Redmond [1972] both report that vocational interest inventories stimulate information-seeking behaviors in youth, an effect that may be related to better career decision processes but not necessarily changes in occupational choice.

Preliminary reports from occupational exploration and development programs for youth suggest that by adolescence, experiences are more likely to confirm earlier occupational choice or fine-tune interest in an area than to be associated with major changes of levels of educational and occupational aspiration or occupational domains.[7]

There also is no evidence that induced occupational information acts in the same way as natural variations, except for the Cuoney and Hoppock [1975] report that immediate increments in job finding and occupational knowledge improved occupational success five years later. The differences in the functions of naturally occurring and induced individual variation could, however, account for the disparity between the Parnes and Kohen findings (that naturally occurring variation in occupational information predicts wages) and the Darcy et al. report of no differences between trained and untrained groups. Without further evidence, the evaluator has little reason to expect that induced changes in occupational information would have the same longer-term effects natural variation studies may show.

2. *Problems Arising from Conflicting, often Implicit Social Values*

From the evaluator's perspective assessing the consequences of improved occupational information would be easier if the hoped for social and personal benefits were explicit and consistent. Often, however, what is expected to happen as a result of improved information is implicit and contradictory. At least three possibilities have been discussed: adjusting the individual to the economic system as it is, changing the economic system to be better for individuals, and using life-cycle education and work changes to adjust both.

a. The labor market as it is: The first approach to improving occupational information emphasizes adjusting the individual to reality in the belief this will mean less frictional and structural unemployment in the short

run, and through better choice of educational alternatives with more realistic expectations, less severe cyclical unemployment in the longer run. Higher wages, fewer unfilled jobs, and greater employee satisfaction and productivity are other outcomes predicted by this approach. Discussions of this genre emphasize the decreased demands for baccalaureate degrees in the liberal arts, the inability of the marketplace to absorb both overskilled and unskilled labor, the need for workers in semiskilled, skilled and technical occupations, and a decreasing rate of returns for higher education. The kind of occupational information presented in this approach usually describes what is required in education, training, skills and attitudes to be a successful worker in different jobs.

b. Changing the demand side to fit post-industrial people: The second approach would change the workplace to reflect changing aspirations, desires and abilities of generations raised in a post-industrial society. Benefits predicted include less underutilization of individual skills and abilities, equality of aspirations and attainment for minorities and women, and the creation by the demands of sophisticated workers of more satisfying jobs through job redesign and worker participation in the setting of industrial democracies. Improved self-knowledge, knowledge of a wide range of occupations, encouragement of higher aspirations and expectations, and knowledge of regulations prohibiting discriminatory practices are among the educational approaches expected to produce a better match between the individual and the world of work. The "push" factor of industrial democracy, the ways in which jobs can be restructured to be more rewarding, and the rights of individuals to earn their living in nontraditional, personally rewarding ways are emphasized in these discussions.

c. Life cycle perspective: "Learning to Be": The third perspective emphasizes a life cycle adjustment between the individual and the world of work. In this view, ad-

justments between the post-industrial desires for individual self-fulfillment, autonomy and responsibility and the demands of the labor market can be achieved through changes in the education and work life cycle. If there will always be jobs that are less intellectually rewarding, through career ladders and continuing education, people do not have to be trapped in entry-level positions. Books and articles based on this assumption stress the probable continuation of jobs with low intrinsic rewards and the importance of increasing mobility and job satisfaction through recurrent education. The outcomes envisioned in these strategies are better meshes between the school and work environments from junior high school through what are now retirement ages, and increased worker mobility and productive use of leisure time through education. According to this approach, most youth would still be found in entry level positions but would have long-term educational and career plans. These plans could be carried out through availability of adequate opportunities for life-long education, competency-based education and certification, and fine-grained job ladders.

3. *Problems Arising from Limited Prior Experience with Occupational Information Programs*

A third major concern from the perspective of evaluation are the claims being made for activities which cost an unknown amount per service delivered with unknown effects. While there are exceptions in the literature, the large-scale, long-term benefits anticipated for occupational information systems may raise public expectations beyond what reasonably can be achieved.

Parnes [1974], for example, states:

> There are at least three respects in which a general improvement in the quantity and quality of labor market information available to youth would lead to social benefits. First, improved specific information at the disposal of workers would sharpen competition among employers in the labor market improving the

> quality of work for all. Second, improved specific labor market information would also permit more efficient short-run allocation and real location of labor, reducing the level of unemployment and shifting the Phillips curve to the left. In particular, by improving the early job choices of youth, better information should reduce their turnover, with a consequent reduction of the differential in unemployment rates between youth and adults. Finally, improved general labor market information at the disposal of youngsters and their parents would substantially affect career decisions with beneficial long-run consequences for both levels of productivity and levels of satisfaction with work and jobs. There is reason to believe that such improvements in knowledge of the world of work could contribute to greater equality of opportunity among youth of different socioeconomic backgrounds, between blacks and whites, and between the sexes. [pp. 2-3]

The outcomes cited, such as greater job satisfaction, lower turnover, and reduced unemployment are quite distant in time from the individual choices associated with a career information system. Usually, the greater the distance between the action possible for the individual during the program and the outcomes promised, the greater the difficulty in documenting program benefits. This evaluation problem is particularly severe when the amount of improvement expected as a result of various occupational information has not been assessed in prior experimental studies.

Also the durability of benefits are unknown in regard to retention of information and its value to the individual. An inverse relationship may be found: the more the adult acts on factual information provided during high school (for example), the less adaptive the information may become. Almost nothing is known about the deterioration curve of occupational information, how quickly it becomes obsolete, and what point between

receiving information and assessing consequences would be maximally sensitive to the effects of the intervention, if no further occupational information is obtained. By this argument, a year by year follow up study of the benefits of occupational information might show a rising curve as the youth acquired sufficient labor market seniority and experience for good decisions to have their greatest impact, then a falling off as information became obsolete. On the other hand, if the occupational information obtained during high school stressed the techniques of career decision-making, the relationship between information and benefits might be linear.

Another aspect is that the costs to develop, operate and maintain large scale information and delivery systems are unknown, and the comparative benefits of different modes of delivery have not been tested. A question such as "We're a medium-size school system, and should we buy into a statewide computerized vocational information service, hire more guidance counselors or what?" cannot be answered at present on the basis of evaluation studies or without systematic variation.

The importance of knowing benefits/costs and cost/effectiveness on a small scale with a well-controlled study before the innovation is spread more widely is among the axioms of evaluation though it is more preached than practiced. On a pilot scale, evaluators like to be reasonably sure the program works, why it works, what problems are likely to arise, and who, if at all, the service probably cannot help. The problems of national impact or post hoc evaluations of large scale interventions which too easily conclude the basic concept is invalid have been extensively discussed in the evaluation literature [National Advisory Council on Education Professions Development, 1974, pp. 26-27]. History may be repeating itself in evaluations of programs providing better occupational information for youth. Without information about the effectiveness of an innovation under the opti-

mum circumstances of an experimental project, there are few ways to determine on a large scale, when control groups and longitudinal studies are difficult to establish, the benefits/costs of the activity, or what could improve its impact [Riecken et al., 1975].

4. *A Moratorium on Improved Occupational Information for Youth?*

The situation just described is not necessarily a bad state of affairs.

First, it takes a long time to achieve conceptual tidiness. Waiting until the theory is complete could delay action for years. We are an impatient people, and a national consensus about the importance of improved career development, including improved occupational information, appears to have been reached.

Second, it is not clear that conceptual tidiness is the best way to produce social change. At least two alternative models are available which seem to work fairly well. In Great Britain, for example, new social programs evolve from older programs, with learning crystallized by national commissions who periodically assess what is happening, what seems to be obsolete and what might be recommended for national policy. In Denmark, opportunities for extensive natural experiments are provided by the authority and funds delegated to locally elected lay boards of education and child welfare. Since, by local choice, almost every approach likely to be reasonably acceptable is being tried out somewhere in Denmark, the blue ribbon commissions can study the impact of numerous alternatives.

Systematic research, development and evaluation, as the United States knows these activities, play little or no role in educational changes in many other countries.

Third, there is a readiness at certain times for trying out ideas. In 1965, there was a readiness for early childhood programs but the field itself was not as ready for large-scale, quality service as it is in 1975. The infra-

structure was missing: there were few trained child care workers, trained supervisory staff, tested materials and curricula, alternative curricula, and systems for expanding facilities and maintaining service quality after seed money had phased out.

The vocational information infrastructure may be in considerably better condition, since, thanks to the Smith/Hughes Act of 1917 and subsequent investment in vocational programming research and development, professional organizations are well established, training in postsecondary institutions is quite extensive and could be mobilized with some additional support, some information and tools of the trade already exist and are being added to almost daily.

However, the state of affairs may not be so comfortable that it should continue uncritically. Public accountability and the expansion of a good idea may depend in part on evaluation data. Also, most people want to improve what they spend their lives doing, if only to fine-tune delivery rather than challenge its rationale. The ethics of intervention in human lives, however benign in intent, demand impact accountability. Evaluation helps make implicit assumptions about human nature and the world explicit and provides a quality control for service delivery.

Providing improved occupational information for youth (and for adults) has become almost an end in itself, and considerable ingenuity has been devoted to obtaining better information and providing intermediary services. The surge of interest in intermediary systems, improved career guidance, and improved occupational information probably will continue. Career education programs while not universal are widespread, and recommendation for improving vocational/technical education frequently include improved occupational guidance.[8] A number of proposals to improve and expand career education and other intermediary services to youth are being consid-

ered, and some, such as the career education provisions in H.R. 69, already are law.

Expansion of career-related programs for youth may be expected [Baldwin, 1972; Bakalis, 1974]. The Department of Labor demonstration of statewide career information services projects, and the career information, guidance and counseling programs supported by the Office of Education under sections C, D and I of the Vocational and Technical Education Act of 1968 may be harbingers of more to come.

5. *Approaches to Evaluating Improved Occupational Information Services*

Reubens [1974] suggests five types of evaluation studies:

a. Studies of input: such as documenting the number and type of counselors available, training provided to staff, reliability of occupational data and location of services.

b. Quantitative reports: describing how much service was provided, such as the number of clients served, number of meetings with schools, and number of pamphlets distributed.

c. Qualitative reports: of what schools do with materials, whether counselors and teachers know as much as they should after receiving the materials and training, whether the advice is directive or nondirective.

d. Consumer reaction: what do students think of the career information they've received? Do they use it? What do employers think about the services, and young people who have received them?

e. Accomplishments: studies of what would happen if the services didn't exist. Are the costs of service delivery justified by results for individuals and for society?

Assessment of the first four types seems both relevant and feasible. Assessing accomplishments is more difficult. At least three different approaches to assessing impact have been tried: economic indicators, indicators of better

decisions, and indicators of better decision-making processes.

a. Economic returns from employment: with regard to economic indicators, Carbine in Lecht [1974] recommends examination of earnings, duration of employment, job security, fringe benefits and amount of leisure time. One advantage of using economic indicators of outcomes is that youth unemployment is one of the problems from which recent interest in occupational information programs for youth originated.

Cobern, Salem and Mushkin [1973] argue for assessing the success of the schooling process in terms of educational outcomes rather than educational inputs. Among the 58 different educational outcomes they recommend are investment aspects of the effects of education on income and employment. While Cobern et al. do not discuss the impact of occupational information acquired through the educational process, their discussion is consistent with the belief that both primary and secondary outputs should appropriately include investment aspects of income and employment. The indicators may be distant from the input of better career information, but they are close to the social problems to which better career information is expected to be a solution: better jobs and more jobs for young people. There are, however, two major limitations to this indicator. (1) If most youth are reporting their preferences and later behavior accurately, it doesn't make much sense to learn that someone would choose job challenge over money per se as a decision rule, and then evaluate the outcome of occupational information on the basis of average weekly earnings for youth with high and low levels of occupational information. There ought to be a match between the decision rules individual youth tell us they are using and the criteria for assessing occupational information programs. (2) The economic outcomes are probably most directly attributable to economic cycles and labor market

practices [Department of Labor, 1972]. Freeman [1974] suggests that low-paying entry jobs are largely an aging vat for youth regardless of their competencies and personalities. Part-time jobs for youth, the kind most typically sought during high school, may be unavailable in inner cities and other areas where youth unemployment is high. In times of economic recession when youth are paid the same minimum wage as older workers, employers seem to prefer the more experienced, senior person to the less experienced younger person. One reminder of the relative remoteness of economic criteria from occupational information may be Darcy, Kauffman and Milkers' [1974] finding that whether or not a young person joined a union immediately after high school made more difference to hourly wages than any other factor, including occupational information.

b. Assessments of better decisions: another class of indicators has been "the student will make better career decisions." No one has defined a better decision directly but there are several indirect approaches.

One approach is asking the student. According to Reubens [1974], Hoyt suggests nine criteria as outcomes of improved occupational information systems: the recipients (1) have jobs, (2) have jobs related to their training and education, (3) are certain that their present occupation is the best choice for them, (4) are satisfied with their present jobs, (5) derive greater satisfaction from the job itself than how much they are paid, (6) see themselves as using skills learned during their training and education, (7) are judged satisfactory by employers, (8) have low turnover, and (9) show progress over time in earnings and levels of employment.

A second approach is through tests. The Center for the Study of Evaluation [Hoepfner, 1974] has published a series of guides to commercially available tests. The guide for tenth, eleventh and twelfth grade students [1974] has 29 small-type pages listing vocational interest

and guidance tests, approximately 1,300 individual measures in all. According to the CSE raters, most of these tests are "good" in ease of administration, "good" in appropriateness of the reading level and content to the users, but are "poor" in terms of validity (do they measure what they claim to measure) and normed technical excellent (e.g., representativeness of the standardization group).

A more serious limitation is that each test embodies values in how an answer is scored, and the user may not agree with these values. This problem is particularly important in the development and interpretation of measures of values toward work, career maturity and decision-making. The theories of career decision-making [Jepson and Dilly, 1974] on which many of the scales are based assume that one should make a career decision at the end of the developmental process, and, by and large, stick to it. Many measures reflect this, i.e., one gets a lower score by being uncertain and still exploring, and a higher score for being firmly committed to an occupational choice. Further, most measures assume that a close mesh with the world as it is desirable. For example, consider the following items:

(1) True/false: The job I choose has to give me plenty of freedom to do what I want. (False is correct.)

(2) True/false: The best thing to do is to try out several jobs, then choose the one you like best. (False is correct.)

(3) True/false: I want to really accomplish something in my work—to make a great discovery or earn a lot of money or help a great number of people. (False is correct.)

The first item is considered false because jobs rarely give freedom to do what people want, and thus a person looking for this quality in a job is career immature. The second is considered false because trying out different

occupations is considered more immature than seeing a counselor. The third is considered false because jobs rarely give a person a chance to do something great. The career mature individual may, however, aspire to "a job allowing her/him to do something he believes in or where the greatest reward of the job is the pleasure of doing it." As another example, throughout one measure, money as a primary source of career satisfaction is considered more career immature than valuing the intrinsic rewards of an occupation. In other measures, knowledge of how much a person earns in different jobs is regarded as a criterion of better occupational information while knowledge of the job satisfaction reported by people in different jobs and with different levels of education isn't tested.

The psychometric picture requires caution in designing evaluations of the effectiveness of occupational information systems, in terms of the hazards of the available tests and the poor ratings on validity and normed technical excellence. A quantum improvement may be Prediger et al. [1973] promised validity data for a large sample of young people who have received feedback from the "Assessment of Career Development" prepared by the College Testing Service.

c. Assessment of better decision-making: the third approach to outcome assessment is examining the decision-making process itself. People disagree on what is a better decision; agreement seems to come more easily that the decision-making process ought to involve self-assessment, consideration of long-term and short-term goals, assessment of one's preferences for various life styles, examination of the short-term and longer-term characteristics of different occupations, and an understanding of educational requirements for different jobs. Most people write, too, that after career decisions have been somewhat focused, exploration of different jobs through working in the area and talking with people

should precede a choice committing the individual to an educational or occupational course of action. Finally, most people state that while a career decision is a long-term choice, career decision-making should be regarded as a lifelong activity that does not proceed in a linear fashion. Thus that the individual should understand the career choice process itself is seen to be as important as the specific decision reached.

While agreement is perhaps fairly easily reached on the "good" career choice process, measurement of the process by which an individual has reached or is likely to reach a decision is in the earliest stages of development. Except for one project [Katz, 1974] which still does not have readily usable ways of categorizing and summarizing the information, there are no process measures by which one can judge whether the recipient of occupational information or guidance has a good, better or best career choice process.

d. Group and individual differences: one other consideration merits attention in connection with assessment of what has been accomplished through improved vocational information: special outcomes for subgroups of clients. One subgroup is women, whose occupational choices tend to be stereotyped at an early age to three occupations: mother, nurse and teacher, and by adolescence, typically have "expanded" to include only two other occupations: secretary and social worker. Some proposals for improved career information systems for women have offered major changes in occupational sex stereotyping as the criterion outcome.

Our experience suggests that this criterion, if applied to adolescents and adults, may be likely to "fail" programs. It is unclear how much change can be expected after years of socialization to vicarious achievement and to the women's role in occupations [Lipman-Blumen and Tickamyer, 1975]. According to an interim report from one project, for example, the placement rate was higher

for young women than for young men, but young women were more likely after career counseling and better information to select office jobs while young men were more likely to continue toward aspirations that required considerably more education and training.[9]

A second interpretation is that continued occupational sex stereotyping may be less due to past socialization and more to the present effect of other social forces. In another interim report, adult women after extensive counseling were choosing lower status and traditional occupations such as training to be a desk clerk rather than training for motel management. Many women were married, their husbands objected to their receiving training for jobs in which they would earn more money than the men, and the women saw themselves as deliberately choosing occupations that seem sex stereotyped rather than divorce or marital strife.

Similar care in interpreting data may be needed if the impact of occupational information is judged against major shifts in choice for old versus younger persons, or ethnic minorities: the push of past and present socialization may be stronger than the pull of vocational information. Perhaps one realistic criterion expectation is documentation of choices considered, better reasons for rejecting nontraditional choices, and higher aspirations for the next generation.

Another consideration is how the data are analyzed. Most reports show mean scores on the criteria before the program and after the program. Almost no study has begun by assessing for how many youth occupational information is already so extensive that little improvement could be expected, and examining the amount of change for those students for whom change is possible. It may be more significant to know that all of the 25 percent of the students whose initial levels of information showed almost no understanding of occupational issues now have acceptable or average levels of information

than to know that the average gain of the total group was 2.6 points. Analysis in still finer grain would be even more desirable: it should be possible to look over a young person's initial choice, taking into account abilities, aptitudes, interests, etc., decide whether the initial choice is realistic or unrealistic, and a good or poor match with abilities and interests, and examine improvement in individual choices made.[10]

Still another consideration is whether choosing is "good." If a person seeks intermediary service help in reaching career decision, coming to a decision at the end of counseling may be an improvement. What is less clear is the rate at which such a decision is to be approached and the level of uncertainty or fluidity which should remain. Some multi-talented students could succeed in almost any area they chose. For these individuals, the problem may be decreasing fluidity among choices rather than expanding career options. An improvement therefore might be consideration of fewer choices and a relatively high degree of commitment to a given path. For other individuals, accurately perceived individual or societal barriers may mean that choices should be narrowed. For these individuals also, increased certainty and commitment may be an improvement. For still other individuals, increased uncertainty or fluidity or deferment of long-term commitments to give time to explore one's self or the labor market more fully might be an improvement and a sign of career maturity.

Analysis in this fine a grain might be the most sensitive and interpretable indicator of the value of occupational information. To date, however, no reports of either the impact of occupational information on vocational choice, or of the impact of various counseling and guidance programs appear to have used this approach to analysis.

6. *Work in Progress*

Work in progress may considerably improve ability to

assess the accomplishments of new approaches to occupational information.

a. Theory: in terms of improving conceptualization, at least six activities are in progress.

- The National Institute of Education is supporting a twelve-month study of career decision-making, bringing together economic, psychological and sociological theory, practice and knowledge. Among the products will be reports for practitioners and evaluators of what changes are expected on the basis of theory and a review of evidence to date on changes in career decision-making [Mitchell et al., 1974].

- The Federal Interagency Panel on Adolescence has published two reviews of research on work experience and career development programs for youth. Improved occupational information, counseling and guidance are likely to remain a focus on the Panel.

- Several longitudinal studies of career development are reaching fruition. Griliches and Freeman [1974] are examining the economic impact of mixing periods of education and work. Parnes [1974] who is completing secondary analyses of economic and noneconomic returns also has one of the few longitudinal data banks where career information was assessed in high school. Jencks [1974] is reexamining a series of longitudinal studies reporting the relationship of personal, familiar and educational factors to economic outcomes.

- Examination of the educational implications of adjusting the labor market to the individual is increasing. Follow-up studies of European experience with industrial democracy and studies of the educational implications of industrial democracy for the U.S. are under way [Park, 1968; Levin, 1974]. These studies plus the growing emphasis on education for lifelong development should provide a counterbalance to studies based primarily on adjusting the individual to the world as it is.

- Seven different computer based systems are in operation, some of which combine a self-assessment questionnaire, *Dictionary of Occupational Titles* information, information on local and regional labor market projections, data on where further training can be obtained and resource persons banks for more personalized discussions [Myers, 1972; Harris, 1972; Harris and Tiedeman, 1974].
- The Regional Learning Services in Syracuse, New York, is testing an individualized system of assessing interests, providing occupational information, and developing a long-term educational program to bridge whatever gap exists between where the individual is and where she/he would like to go.
- On a more applied level, the National Institute of Education with the cooperation of the Department of Labor is studying the utilization of occupational information, with a view to improving what kind of information is available and how it is used to influence educational planning and individual choices [Coster, 1974].

b. Empirical studies: in terms of improving measurement there are some valuable activities under way.

- The National Institute of Education is funding the first experimental test of the immediate and longer-term impact of programs designed to improved career choice, among other outcomes. The work identifying strengths and limitations of available measures and on developing alternative approaches should yield considerable psychometric information on new measures of career information and career decisions.[11]
- The state of Texas has funded a massive effort to specify the behavioral outcomes of career education programs and to develop adequate measures for assessing pupil progress on these.
- The National Assessment of Educational Progress has completed a survey on career information and

occupational information. The measures used in this study and the studies should be available in 1976.

- The Office of Education has completed a comprehensive review [Developmental Associates, 1974] of measures of career decision-making and other outcomes related to career education.

- Evaluations of programs intended to provide better occupational information and improve career decision-making which include impact studies also may advance the state of the art. At least three such projects are in process: Winefordner's career decision-making program [1974], Harris's and Bowlsby's Project Discover [1975], and McKinney's statewide program [1974].

c. Information on consequences of education: better information about the immediate and longer-term effects for the individual and society of various educational programs related to improved occupational information may be expected in the future. The Vocational and Technical Education Act of 1964 as amended in 1968 required development of state information systems. Some of the systems focus on information about enrollment in and completion of various vocational education programs; others include fairly extensive data on the characteristics of programs attended, student expectations and characteristics on enrollment, and follow-up data. Expansion of these systems is in progress, in part spurred by the requirements of state legislatures for documentation of the costs and effectiveness of public school expenditures. This is not a new problem [Travers, 1949; Center for Priority Analyses, 1971; Miller and Miller, 1974; and Morgan, 1974].

7. *Discussion*

Investment in evaluation depends in part on expectations of how much, how soon and how certain informa-

tion about the effects of occupational information programs for youth will be available. Design is another issue: the number of qualifications the evaluator has to place on findings in large part depends on how controlled an experimental test of the intervention will be supported by program administrators and decision-makers. Will program administrators, developers and decision-makers require fast-turnaround analysis of post hoc surveys of self-selected participants? Will they wait for the results for the longitudinal studies whose findings usually require fewer qualifications? Will they support uniform data collection and controlled experiments in the pilot phases?

A different position has been taken by Stern [1974]:

> The Department of Labor's Occupational Information Systems Grants program is premised on the fact that enough is known about occupational information, development and dissemination to begin an operational program. As such the program is directly concerned with the intelligent application and expedient implementation of ideas and concepts already thought through, recommendations already made, programs already developed, and research evidence and information already available.

Such an assumption would focus evaluation on documenting service delivery with relatively little concern for assessing program consequences. But perhaps enough isn't known and there is reason for caution in the claims made for the benefits of occupational information, as well as caution in promising firm evaluative evidence in the near future. What appears to be indicated is development, with as much speed as possible, of a coordinated evaluative/research agenda to establish more clearly the conceptual underpinnings of various programs, to improve knowledge of the extent of the problems, and to develop better measures so that documentation can catch up with enthusiasm for improving occupational information for youth.

Notes

1. Most theorists seem to believe occupational information is a necessary but not a sufficient condition for improved career choice. This way of formulating the relationship poses methodological problems. To separate, methodologically, the level and extent of a necessary influence on an outcome from that of a sufficient influence seems to require prior specification of the sufficient influences. One can then attempt to obtain independent measures of these sufficient conditions, hold them statistically constant, and assess what remaining variance is associated with the necessary conditions. Apparently, while this is feasible there are no paradigms in the occupational information literature in which the distinction between necessary and sufficient conditions have been applied to testing the effects of improved information on any outcomes. The methodological problems have been brought to the attention of National Institute of Education researchers; we will be exploring the feasibility and effectiveness of various ways of testing the effects of the presumed necessary occupational knowledge when the sufficient conditions are incompletely specified.

2. Opinion about the extent of need, and the appropriate interventions varies. For example, Holland [1973] comments, "a person's intelligence or SES are good estimates of occupational knowledge" (p. 5) and concludes that "large proportions of the population select jobs, get the proper training and manage their careers with little or no help from counselors or vocational agencies of any kind" (p. 9). Holland emphasizes for the perhaps 30 percent of the population who require extensive services and remedies a strategy providing career experiences before key decision times. He urges that these be organized into a single occupational classification scheme which would help the individual match her/his interests and abilities with those of other individuals who have entered major occupational groups. According to Holland, it becomes more important to be able to translate one's personal characteristics into vocational alternatives than to have detailed information on hundreds of occupations. Holland concludes, "occupational and personal information are most useful when they are stated in terms of translation potential . . . simply teaching people about occupations or about themselves is an inefficient method for the development of translation potential" (p. 16).

3. Again, as contrast, Holland [1973] concludes that career uncertainty is not an indicator of major problems, and that research shows career uncertain youth do reach decisions, only more slowly than other people. See also Hosford and Briskin [1969].

4. The question of cultural bias in measures of occupational information has not apparently been examined in the recent literature. Holland, as previously noted, concludes that occupational knowledge is highly related to family background and in-

telligence. The occupational information measured by Bachman, Parnes, Prediger et al. and others seems, however, that typically available to youth from middle-income families. It is easy to imagine a test of occupational information relevant to the economic survival of youth from various subcultures on which middle-class youth would do quite poorly. This is not to argue that information about occupations not immediately available in one's environment is not desirable; only that interpretation of the occupational knowledge of diverse groups should emphasize environmental constraints on the opportunity to learn rather than limitations in ability to acquire occupational information. Another facet of the possible cultural bias in measures of occupational information is the advantage to both student and counselor of a full, accurate assessment of what the client does know about occupations within her or his environment. Little work has been completed, however, in this area.

5. Charner, reviewing an earlier draft, points out that career maturity and occupational information may be too different conceptually and in what is measured to be considered in a discussion of evaluating the impact of labor market information. The terms "career maturity," "occupational information," "labor market information," etc. merit analyses in their own right in a review focused on what is known about the relation between labor market information and various personal or economic outcomes. Readers who believe the term should be interpreted in the sense of economic data about the labor market may find this discussion of predictor and outcome measures too broad. (See Bartlett, 1971.)

6. Lattimore (personal communication) brought this point out quite strongly: "I can't imagine any minority youth placing satisfaction based on interest rather than money . . . in a recession, workers will always want jobs, not intellectual rewards."

7. Interim reports evaluating the National Institute of Education sponsored Experience Based Career Education Programs (EBCEs), the career development program for inner city youth of the Opportunities Industrialization Centers of America (OIC/As) and the Mountain Plains Economic and Educational Development program. These programs are described in the National Institute of Education *Career Education Program Plan, FY1975*. Copies of the interim reports are available from the principal investigators of these projects, whose names and addresses are included in the program plan abstracts of projects funded, FY1974.

8. As one example among many, according to the Manpower Research Council (undated) a survey of companies employing a total of 659,481 people showed that the most frequently mentioned steps for improving the employability of high school graduates were greater concentration on vocational training in high school, more and better quality job-related counseling, orientation to what will be expected by an employer (attitude, punctu-

ality and appearance) and earlier exposure to available career opportunities and general career guidance.

9. See Footnote 7 for reference.

10. Among the approaches to validation, increments in items correct with grade level or respondent age are usually reported as evidence that the items are measuring vocational maturity. Westbrook and Parry-Hill [1973] offer an additional comparison: the mean scores for students who are considered as vocationally adjusted or vocationally maladjusted and those who are considered to have vocationally congruent choice interests and those with vocationally incongruent choice interests. Higher scores on all area subtests for the vocationally congruent group (grade 9) and higher scores on all subtests but work conditions (adjusted) are considered evidence of measure validity. The definition of adjustment used by Westbrook and Parry-Hill is based on the Crites [1969] system: "Adjusted pupils are those whose vocational choice is in the field of their interest and on the appropriate aptitude level. Maladjusted pupils are those whose choices agree with neither their field of interest nor their level of aptitude" (p. 16). With regard to congruence, "Pupils whose vocational choice was in the field of their highest interest on the Kuder Preference Record comprised the congruent vocational choice interest group. The incongruent vocational choice interest group consisted of all those pupils whose vocational choice was in a field other than their highest interest" (p. 17). Vocational "adjustment" by this criterion was low among the ninth grade sample: 26 of the 143 youngsters were rated as adjusted taking interest and aptitude into account. Congruence was about the same: 42 of 2,049 ninth graders were rated as congruence when aptitude was not taken into account, about 18 percent of each group, by each criterion.

11. Distinguishing between reliable, valid but insensitive measures and reliable, valid and sensitive measures of program effectiveness is another methodological challenge. In principle, comparison of results when the same measure has been used to assess the effectiveness of a fairly wide variety of interventions, with some independent measure of the quality of implementation and apparent success, should help identify measures likely to reflect the true impact of an intervention. In practice, independent measures of program implementation and quality are rarely available, and sets of studies where common measures have been used with reasonably acceptable designs are even rarer. A National Institute of Education funded search for measures used to assess the impact of programs for youth who had or were about to drop out of school has brought together the only review of which we know searching from sensitive, measures from the perspective of actual outcomes [Koropkin, 1975]; these were, however, one study only measures. The Federal Interagency Panels on Early Childhood and on Adolescent Research are leading a national effort to improve comparability of R&D measures [Grotberg, 1974].

References

Alameda County School Department. *Guidelines for the Establishment of Career Information Centers.* Hayward, California, 1972. (EDO74239; VT19505)

American College Testing Program. *Assessment of Career Development: User's Guide and Report of Research.* Boston: Houghton Mifflin Co., 1974.

Bachman, Jerald et al. *Youth in Transition,* Vol. II, *The Impact of Family Background and Intelligence on Tenth-Grade Boys* and Vol. III, *Dropping Out—Problem or Symptom?"* Ann Arbor, Mich.: Institute for Social Research, 1971.

Bakalis, Michael J. *Facilitating Career Development: An Annotated Bibliography II.* Final Report, Grant No. OE6-0-73-2979. Carbondale, Illinois: Southern Illinois University, February 1974.

Baldwin, Fred D. *Federal Youth Programs.* Office of Planning, Research and Evaluation, Office of Economic Opportunity, December 1972.

Bartlett, W. E. "Vocational Maturity: Its Past, Present and Future Development," *Journal of Vocational Behavior,* 1971, No. 1, pp. 217-29.

Barton, Paul E. "Youth Unemployment and Career Entry." Paper presented at the Temple University Conference on Improving Labor Market Information, October 21, 1974.

Birnbaum, Howard. *Education and the World of Work: A Quick, Critical Appraisal.* Mimeo, September 11, 1974.

Center for Priority Analysis. *An Analysis of Manpower Requirements Information and the Availability of Vocational Education in Selected Urban and Rural Areas.* Final Report, Contract No. OEC-0-70-4926. Washington: National Planning Association, September 20, 1971.

Cobern, Morris; Salem, Claude and Mushkin, Selma. *Indicators of Educational Outcome.* Department of Health, Education and Welfare, Publication No. (OE) 73-11110, 1973.

Coster, John. *A National Study of the Availability and Use of Manpower Data in Vocational Education,* NE-C-00-3-0069, 1974.

Cuony, Edward R. and Hoppock, Robert. "Job Course Pays Off," *Personnel and Guidance Journal,* March 1954, pp. 398-91.

———. "Job Course Pays Off: Five Years After," *Personnel and Guidance Journal,* October 1957, pp. 116-17.

Crites, John O. *Career Maturity Inventory: Administration and Use Manual.* CTB/McGraw-Hill, 1973.

Darcey, Robert L.; Kauffman, Richard V.; and Miller, Edward P. *Manpower Economic Education and the Transition from School to Work.* Center for Economic Education, Colorado State University, February 1974.

Department of Labor. *Opportunity for Careers,* Mimeo, 1972.

Educational Testing Service. "Assessment of the Experience

Based Career Education Program." Contract NIE-C-74-0118. In progress.

Folk, Hugh. "The Problem of Youth Unemployment" in *The Transition from School to Work*, a report based on the Princeton Manpower Symposium, 1968.

Freeberg, Norman F. *Development of Assessment Measures for Use with Youth: Work Training Program Enrollees, Phase II, Longitudinal Validation*. Final Report. Princeton: Educational Testing Service, 1974.

Freeman, Richard B. "Youth Employment Opportunities: Changes in the Relative Position of College and High School Graduates." Paper presented at the Temple University Conference on Improving Labor Market Information for Youths, October 21, 1974.

Gibboney Associates. "Assessment of the Opportunities Industrialization Center Career Intern Program." Contract NIE-C-00-3-0122. In progress.

Ginzburg, Eli. *Career Guidance*. New York: McGraw-Hill Book Co., 1971.

Griliches, Zvi and Freeman, Richard. *Schooling, Training and Experience: Econometric Investigations of Determinants and Returns*. NE-G-00-3-0202, 1974.

Grotberg, Edith H. Memorandum on Comparability of Research Results to Directors of Agencies represented on the Interagency Panel on Early Childhood Research and Development, and the Interagency Panel for Research and Development on Adolescence, July 18, 1974.

Harris, J. E. "Analysis of the Effects of a Computer-Based Vocational Information System on Selected Aspects of Vocational Planning." Unpublished doctoral dissertation. Northern Illinois University, 1972.

Harris, JoAnn and Tiedeman, David V. *The Computer and Guidance in the United States: Past, Present and a Possible Future*. ERIC Clearinghouse in Career Education. Information Series No. 2. Northern Illinois University, July 1974.

Harris-Bowlsby, JoAnn. "Career Guidance Systems." Paper Presented at the National Career Education Forum, Center for Vocational Education, Ohio State University, March 21, 1975.

Hills, Kenneth D. *Review and Analysis of Sources of Occupational Information for Career Education*. Ohio State University, Center for Vocational and Technical Education, 1973. (EDO79482; VTO20377)

Hoepfner, Ralph et al. *CSE Secondary School Test Evaluations, Grades 7 and 8; Grades 9 and 10; Grades 11 and 12*. Los Angeles: Center for the Study of Evaluation, UCLA Graduate School of Education, 1974.

Hodgson, Godfrey. "Do Schools Make a Difference?" *Atlantic*, 1973.

Holland, John L. *Some Practical Remedies for Providing Vocational Guidance for Everyone*. Report No. 160. Baltimore:

Center for Social Organization of Schools, The Johns Hopkins University, October 1973.

Hosford, R. E. and Briskin, A. S. "Changes through Counseling," *Review of Educational Research*, 1969, Vol. 39, pp. 189-209.

Jepson, David A. and Dilley, Josiah. "Vocational Decision-Making Models: A Review and Comparative Analyses," *Review of Educational Research*, 1974, Vol. 44, No. 3, pp. 331-49.

Jencks, Christopher. *New Estimates of the Effects of Family Background, Test Scores, Personality and Years of Schooling on Economic Success.* NIE-G-74-0077, 1974.

Johnston, Jerome and Bachman, Jerald G. *The Work Attitudes and Early Occupational Experiences of Young Men.* Final Report, Department of Labor Contract No. 81-26-72-05. Ann Arbor: University of Michigan Survey Research Center (The Youth in Transition Project), April 13, 1973.

Katz, Martin. *Simulated Occupational Choice: A Criterion of Competence in Career Decision-Making.* NE-G-00-3-0216, 1974.

Lecht, Leonard A. *Evaluating Vocational Education—Policies and Plans for the 1970s.* New York: Praeger Publishers, 1974.

Levin, Henry. *Educational Requirements for Industrial Democracy.* NE-G-00-3-0205, 1974.

Lipman-Blumen, Jean and Tickamyer, Ann A. "Sex Roles in Transition: A Ten Year Perspective," *Annual Review of Sociology*, Vol. 1, in press.

Manpower Report of the President, 1972. "New Perspective on Youth Unemployment," pp. 77-100.

Manpower Research Council. *The Employability of Youth.* Research Report No. 7.

Miller, Robert and Miller, LaRue. *Impact of Vocational Education Research at the Federal and State Levels.* Project Baseline, Northern Arizona University, October 25, 1974.

Mitchell, Anita M.; Jones, G. Brian; and Krumboltz, John D. *Making a Choice: Understanding Career Decision-Making.* NIE-C-74-0134, 1974.

Morgan, Robert L. (ed.) *Management Information Systems for Vocational Education: A National Overview.* Technical Report No. 1, Raleigh: North Carolina State University, Center for Occupational Education, DASP Program Division, 1974.

Myers, R. A. et al. *Educational and Career Exploration System: Report of a Two-Year Field Trial.* New York: Columbia University Teachers College, 1972.

National Advisory Council on Education Professions Development. *Search for Success: Toward Policy on Educational Evaluation.* June 1974.

Nolan, J. J. "The Effectiveness of the Self-Directed Search Compared with Group Counseling in Promoting Information-seeking Behavior and Realism of Vocational Choice." Doctoral dissertation, University of Maryland, 1973.

Officer of Education. *National Longitudinal Study of the High*

*School Class of 1972*. Washington: U.S. Department of Health, Education and Welfare.

Osipow, S. *Theories of Career Development*. New York: Appleton, Century, Crofts, 1968.

Park, C. K. *Economic Changes, Manpower Requirements and Their Implications for Educational Policy in the Next Two Decades*. Unpublished report submitted by National Planning Association, Center for Priority Analysis, to U.S. Office of Education, 1968.

Parnes, Herbert S. "Improved Job Information: Its Impact on Long-Run Labor Market Experience." Abstract of Paper presented at the Temple University Conference on Improving Labor Market Information for Youths, October 21-22, 1974.

Parnes, Herbert S. and Kohen, Andrew I. *Occupational Information and Labor Market Status: The Case of Young Men*. Columbus: Ohio State University Center for Human Research, 1973.

Prediger, Dale J.; Roth, John D.; and Noeth, Richard J. *Nationwide Study of Student Career Development: Summary of Results*. American College Testing Program, Research Report No. 61, November 1973.

Redmond, R. E. "Increasing Vocational Information Seeking Behaviors of High School Students." Doctoral dissertation, University of Maryland, 1972.

Reubens, Beatrice G. *Bridges to Work: International Comparisons*. Columbia University, Conservation of Human Resources, in preparation, 1974.

Riecken, Henry W. et al. *Social Experimentation: A Method for Planning and Evaluating Social Programs*. Forthcoming. New York: Seminar Press, 1975.

Stern, Barry E. "Application of Information Systems to Career and Job Choice." Summary of paper presented at the Temple University Conference on Improving Labor Market Information for Youths, October 21-22, 1974.

Travers, R. M. W. "A Critical Review of Techniques for Evaluating Guidance," *Education and Psychological Measurement*, 1949, Vol. 9, pp. 211-25.

Westbrook, Bert W. and Parry-Hill, Joseph W., Jr. *The Construction and Validation of a Measure of Vocational Maturity*. Technical Paper, No. 16. North Carolina State University, Center for Occupational Education, 1973.

Winefordner, David. *Career Decision-Making*. NE-C-00-3-0093, 1974.

Zener, Thelma and Schnuelle, L. *An Evaluation of the Self-Directed Search: A Guide to Educational and Occupational Planning*. Report 124. Center for the Social Organization of Schools, Johns Hopkins University, 1972.

# Improved Job Information: Its Impact on Long-Run Labor Market Experience

*Herbert S. Parnes**

It should be pointed out at the outset that the title assigned to this paper is by no means precise in its meaning. What kinds of "job information," for example, are referred to? Are we speaking of information concerning the availability and characteristics of specific jobs in the local labor market for which a given worker may qualify at a given point in time, or is the concept broad enough to include all of the types of knowledge relevant to the series of educational and training decisions that a youth makes in the complex process of occupational choice? Does "improved" job information mean new types of information to be developed and made generally available, or simply the wider and more effective dissemination of information that already exists? Finally, what is the dependent variable in the analysis? Is it the relative position of the individual recipient of "improved" information in terms of income, employment stability, and job satisfaction? Or is it the general operation of the labor market? And in either case what is the implication of the term "long run"?

In addition to the title's ambiguities, it is also somewhat presumptuous. Since the publication of George Stigler's article on "Information in the Labor Market," economists have given increasing attention to the idea of job search and the accumulation of labor market information as investments in human capital, with payoffs in higher earnings.[1] Nevertheless, there has been precious little in the way of empirical evidence on the relationship between specific types of labor market information and labor market experience, and it is not at all clear that a confident answer to the question—either in the short run or the long run—is possible.

Reflection and reading on the subject have neither reduced the ambiguities nor increased this writer's confidence nor anyone else's, it may be immodestly added —to provide definitive answers. Yet, one of the blessings of an ambiguous title is that one can pretty much make of it what he wishes. This paper will therefore do the following: In the first section the attempt will be made to clarify the concept of "job information"—or at least to indicate what it *should* mean in the context of this discussion. Next, there will be a look at the evidence relating to the extent to which young workers have adequate labor market knowledge and of the factors that appear to be related to variations therein. In the third section some evidence will be presented on the relationship between the possession of certain types of labor market knowledge by male youth at one point in time and the wages and occupational assignments they are subsequently able to command. Finally, a concluding section will try to come to grips with at least one interpretation of the question implicit in the title: what are the several types of consequences to be expected from the provision of more adequate labor market information for youth?

*Dimensions of Knowledge of the World of Work*

Although not much is to be gained by quibbling over

terminology, the term "job information" does seem to be too narrow in its connotation to convey the rich variety of kinds of knowledge that can contribute to successful achievement of individual goals in the labor market and to the more efficient allocation and utilization of human resources. Four categories of information, which vary in their relevance and usefulness depending upon the stage of the life cycle one is considering, should be examined.

First, there is the distinction between what Yavitz and Morse have referred to as *specific* and *general* labor market information.[2] The former is of particular relevance to employed workers and to workers with fairly well-established occupational affiliations who have lost their jobs. This includes a variety of types of information about firms in the local labor market that employ workers with similar qualifications, including an "extensive" dimension (e.g., wages, fringe benefits, vacations) and an "intensive" dimension (e.g., fairness of supervision, congeniality of fellow employees, and similar characteristics that are more difficult to learn about through formal channels).[3] Such information allows employed individuals to know whether they can improve their situations by making a move and permits unemployed workers to locate the best job in terms of whatever criteria they choose to apply.[4]

General labor market information, on the other hand, is relevant to certain "transition periods" in the lives of workers or potential workers and relates to broader types of questions. Here the issue is not alternative employers, but alternative types of work, and the important questions relate to relative employment opportunities in both the short and long run, avenues of preparation for alternative occupations, relative income prospects and a host of other characteristics. It is worth emphasizing that just as some types of specific labor market information are more readily attainable than others (e.g., wages

versus quality of supervision), the same is true of information about occupations. It is easier, for example, for a youth to learn and comprehend what the income differential is between a college professor and an electrician than to gain an understanding of "what it's really like" to be either of these.

In any case, general labor market information of this kind is clearly crucial to youth preparing for the world of work. Moreover, because the process of occupational choice is both developmental and largely irreversible, it is clear that this kind of information, in varying degrees of specificity and with varying degrees of sophistication, should be possessed by youth long before their junior year of high school.[5] Educational decisions all along the line—whether and how much to study, what courses to take in junior high school, what kinds of outside reading to do—are all potentially influenced by such knowledge. Moreover, since for children of younger ages many of these decisions are made—or at least substantially influenced—by parents it follows that to be completely useful the information may have to be possessed by persons other than the youth themselves. School counsellors and teachers constitute additional examples.

A third type of information that conditions accommodation to the world of work relates to how to operate effectively in the labor market, including how to go about looking for a job and how to present oneself to prospective employers. What job search techniques are likely to be most productive? Which labor market institutions can facilitate the process of obtaining a job? Specifically, what are the potential contributions of the public employment service, private employment agencies, trade unions and various types of public service organizations? And how do these differ with respect to various kinds of jobs?

Finally, one of the components of a comprehensive

knowledge of the world of work is not so much informational in the conventional sense as it is an understanding of the regimentation that is inherent in greater or lesser degree in most work situations. The importance to success of regular attendance, punctuality, good work habits, concern for the objectives of the employing establishment, and conformity to accepted standards of dress and behavior should be understood. To mention these factors is, of course, not necessarily to endorse all of them nor to argue that all of them are essential to the efficient performance of all jobs. However, to fail to make clear the consequences of ignoring such requirements would be a disservice to young people. There is merit in "telling it like it is," even if one doesn't completely endorse the existing state of affairs.

In sum, the kinds of knowledge relevant to successful labor market activity are numerous and diverse. They include all those types of information and know-how that are likely to enhance individuals' ability to pursue their goals as they make choices in the process of preparing for, seeking, and holding jobs. Just as there are vocational skills and know-how essential to effective performance of an occupational function, so there are labor market skills and know-how essential both to deciding what vocational skills to acquire and to developing the opportunity to practice them to the greatest advantage.

*The Adequacy of Knowledge of the World of Work*

No one supposes that workers have the "perfect knowledge" that is the hallmark of a competitive labor market. On the other hand, no one believes, either, that workers make labor market choices in absolute ignorance. There has been a long debate over the adequacy of workers' labor market information that has been largely sterile, since there is no easy criterion for judging how much is enough.[6] According to the traditional eco-

nomic formulation, the acquisition of information by an individual, since it is not costless, should be pursued until the marginal cost of obtaining additional information exactly equals the (discounted) contribution of the information to the future income stream. Whatever merit this formulation may have in some contexts, it is fatuous in others: for instance, where individuals are not even in a position to know the kinds of information that are relevant to their needs. The notion of an eleven-year-old making marginal calculations to determine how much she or he should learn about alternative occupations is illustrative.

Even if there is sufficient labor market information for the market to perform its allocating function reasonably well, there can be no doubt that many workers have serious deficiencies in certain types of knowledge that are generally regarded to be essential for self-serving labor market decisions. In his classic study of New Haven in 1949, Lloyd Reynolds adduced evidence to show that large numbers of manual workers had fallacious impressions of how their wages compared with those in other firms in the community, and that most of the workers could not cite specific employers to whom they would apply if they were out of work.[7] More recent evidence from the National Longitudinal Surveys for a national sample of young men in their teens and early twenties is similar. When those who were not enrolled in school and who were employed as wage and salary workers were asked what they would do if they lost their current jobs, the vast majority responded that they would seek other work. Only half of these, however, cited a specific employer to whom they would apply. Indeed, even among those who indicated that their job search would be confined to direct application to employers, two-fifths were unable to provide the name of a firm to which they would apply (Table 1).[8]

Table 1. Percentage of Young Wage and Salary Earners[a] Naming at Least One Employer to Whom They Would Apply if Out of Work, by Method of Seeking Work, 1966

| Method of job search[b] | Number in population[a] (thousands) | Percent naming one or more employers[c] |
|---|---|---|
| Check with employers | 1,459 | 62 |
| Ask friends and relatives | 255 | 32 |
| Public employment service | 292 | 46 |
| Place or answer ads | 196 | 43 |
| Private employment agencies | 46 | 39 |
| Other or combination | 1,907 | 51 |
| Total or average | 4,155 | 53 |

[a] Young men 14 to 24 years of age, not enrolled in school and employed as wage and salary workers, who responded "look for work" to the query "If for some reason you were permanently to lose your present job tomorrow, what would you do?"

[b] "How would you go about looking for . . . work?"

[c] "Are there any particular companies in this area where you would apply?"

SOURCE: National Longitudinal Surveys, unpublished data.

There is persuasive evidence that many youth take their first jobs in a very haphazard manner and without adequate knowledge. In the New Haven study cited above, Reynolds found that ". . . most youngsters (and their parents) approached the choice of a first job with no clear conception of where they were going. . . ." More recently, in an interview study of the graduates of Detroit high schools one year after graduation, Singell found that "most youths had not 'chosen' a job in any real sense, but had either drifted into one or had taken it because they could find no other. . . . Furthermore, the youths exhibited extremely vague knowledge about wages, working conditions, steadiness of employment, and chances of advancement when they accepted their first job." [9]

Garbin and his associates, on the basis of a study of the perceptions of vocational educators concerning the labor market problems of high school graduates, have

reported that half of the 69 vocational educators they surveyed in 22 urban areas believed that youths frequently have unrealistic aspirations and expectations relative to the requirements and rewards of their initial jobs. Moreover, over two-fifths of the respondents attributed some of the labor market problems of youth to "poor attitudes toward work and working, lack of responsibility, maturity, and self-discipline, and lack of knowledge of the real demands of the work." [10] The labor market information of disadvantaged youth has been found to be especially meager. A study of 450 high school dropouts in a North Philadelphia ghetto who had applied for training revealed that about half of the youth were unable to express a job preference and that the number of occupations with which they were familiar was very small. Moreover, according to the authors, the "youth tended to have little understanding of concepts of success and achievement." [11]

Several studies have attempted to assess the extent of occupational knowledge possessed by youth still enrolled in school. The American College Testing Program tested a national sample of high school students in grades 8, 9, and 11 on a number of dimensions of career development, including occupational knowledge. Less than half of the 11th graders answered more than three-fourths of the 54 questions on occupational characteristics correctly, in spite of the authors' judgment that "with appropriate career guidance experiences" at least 90 percent of the students should have achieved this level of success. The study also indicated a perceived need by the students for considerably more help in making career plans than they were getting. The authors believed that their findings "presage unfortunate amounts of floundering and prolonged states of indecision that are costly both to the individual psyche and to the corporate body." [12]

In contrast, Richard Freeman, on the basis of his study of graduate and undergraduate college students, is im-

pressed with the amount of information his subjects appeared to have "about economic opportunities in the market for college graduates," and identifies "marginal suppliers" who manifested a particular sensitivity to economic stimuli as they cast about for more attractive alternatives to their current fields of study.[13] Yet, even Freeman's data show that a sixth of the undergraduates and an eighth of the graduate students believed that the information available to them at the time they made their career choices was inadequate, while another fourth regarded it as "barely adequate."[14] Moreover, other investigators of the process of career choices among college students have drawn generalizations different from those of Freeman. A study of almost two thousand male and female members of the 1972 graduating classes of five Pennsylvania colleges and universities reported that many of the students believed they were forced to make career choices earlier than they would have preferred and on the basis of inadequate information. Two-fifths of the students reported that they were "not too aware" and one-fifth that they were "not at all aware" of the job market in the field of their major at the time they selected it.[15] In the words of the report,

> Many feel that they were forced to make career choices before they had adequate knowledge of the intricacies and complexities of different careers, and before they had an opportunity to study the fit between their own personal values and the dimensions of the field of study and career which they selected.[16]

Moreover, in the opinion of many,

> . . . they have not been provided with the kinds of career related data which would enable them to find the kind of work they seek. Most have received little, if any, hard data about the job market, avenues they might puruse given a situation in which they were unable to find work in their fields, and little informa-

tion about the expectations of potential employers and potential co-workers.[17]

Whatever may be true of the amount of occupational information youth have *on the average*, there is persuasive evidence of substantial variation in the extent of this knowledge according to demographic and social characteristics. As part of the National Longitudinal Surveys, an occupational information test was administered to a national sample of young men 14 to 24 years of age in 1966. The test consisted of three components: (1) multiple-choice questions asking respondents to identify the duties of ten occupations ranging from hospital orderly and forklift operator to economist and social worker; (2) questions relating to the typical educational attainment of men in each of these same occupations; and (3) questions on the relative earnings of each of eight pairs of occupations (e.g., auto mechanic versus electrician).[18]

Multivariate analysis of the test scores was conducted separately for youth enrolled in school at the time of the survey and those who were not and, within each group, for blacks and whites. For the students there was a substantial relation between grade level and occupational information as measured by the test, such that a young man in the senior year of high school scored about two-thirds of one standard deviation higher than a freshman, other things being equal. For those out of school, also, occupational information was strongly related to educational attainment and, to a lesser degree, to years in the labor market since leaving school.

What is most important is that for both students and nonstudents and for whites and blacks alike, extent of occupational information was found to bear strong positive relationships to socioeconomic status and measured intelligence, and also to be greater among youth in large urban areas than among rural youth. Finally, black youth scored consistently lower than white youth on the

occupational information test, even when all of the other factors were controlled in the analysis.[19]

These results suggest the ways in which young people find out about the world of work. One important way is through the educational system, even when no explicit or conscious attempt is made to impart such knowledge. A youngster is obviously more likely to know what a chemist does after having taken a course in chemistry or having talked with classmates who have done so. Similarly, a student is more likely to understand the implications of being a dietitian after a course in home economics than previously. In addition to such exposures to specific occupations, the general broadening of horizons that accompanies progression through the educational system is likely to increase a youth's understanding of the several dimensions of the world of work.

Understanding is also developed through even less formal processes, such as discussions with friends about jobs held by family members, general reading, motion pictures and television, and mere observation. Thus, the relationship between socioeconomic status and extent of occupational information doubtless reflects the richer intellectual environment that, on average, exists for youngsters from middle and upper class backgrounds. A number of observers have alluded, for example, to the consequences of the absence of occupational role models for many ghetto black youth.[20] Similarly, the advantage of urban over rural youth in this respect may be explained simply by the wider range of occupations that the former are likely to encounter.

The findings are also important in pointing up where the greatest efforts for improving information about the world of work must be expended if the objective of social policy is to attempt to equalize opportunities. The data suggest the need for concentrating on increasing the occupational sophistication of youngsters in the earlier years of school and, at all levels, among youth in the

lower socioeconomic strata and among blacks. Moreover, in all of these cases it seems likely that lines of communication need to be established with parents as well as with the youth themselves.

Adequate information is obviously not a sufficient condition for equality of opportunity, but it is a necessary one. The son of a coal miner in an isolated mining community cannot make the kinds of comparisons implied by the economic theory of occupational choice between the prospective careers of coal miner and economist if he has never heard of the latter occupation. And even if he has heard of it, he is unlikely to be able to make a "rational" choice in the absence of fairly complete information about how one becomes an economist, the kinds of work economists do, and the kinds of lives they lead. Knowledge of earnings distributions, it is important to note, is not enough even for purposes of taking account of economic rewards, to say nothing of the many other respects in which occupations differ. Given the institution of the expense account, it is clear that earnings in many professional and managerial positions ignore a substantial amount of the (tax free) real income afforded by those occupations.

*Occupational Information and Labor Market Status of Youth*

It is possible to test the hypothesis that superior labor market information has a payoff to the individual in the form of more attractive employment opportunities, although empirical tests of this relationship are beset with methodological difficulties, which may account for the dearth of hard evidence on the matter. For one thing, if the extent of a worker's labor market knowledge and the characteristics of his job are observed simultaneously, there might well be some question as to the direction of causation even if a relationship were found between amount of information and characteristics of job. Moreover, since such factors as general ability and educational

attainment are correlated both with status in the labor market and extent of occupational information, it is necessary to be able to control statistically for such variables in seeking to ascertain whether labor market information makes an independent contribution to the labor market success of the individual.

The data from the National Longitudinal Surveys referred to earlier have made it possible to deal with both these problems in investigating the relationship between occupational information and labor market status. First, it has been possible to relate scores on the occupational information test administered in 1966 to the *subsequent* labor market status of the youth—specifically to their average hourly earnings and their occupational levels two years later.[21] Secondly, in doing this, the data have also permitted the introduction of controls for such conventional human capital measures as years of school completed, quality of high school attended, mental ability, socioeconomic status, years of work experience, and health condition. Region and type of residence (i.e., South versus non-South and SMSA versus non-SMSA) were also included in the multivariate framework in order to take account of variations in price level and occupational structure.

On this basis, statistically significant relationships were obtained between the occupational information test score and (1) average hourly earnings and (2) occupational status for both blacks and whites.[22] Thus, on the basis of this study, it would appear that the extent of a youth's occupational information makes a difference for his subsequent relative position in the occupational and wage structures, holding constant such other characteristics as his educational attainment, intelligence, socioeconomic status, etc. Indeed, there is reason to believe that these findings understate the total contribution of the kinds of labor market information measured by the test, since they ignore the *indirect* effects such knowledge

may have on occupational status and wages via its effect on educational attainment. In this connection, it should be noted that the analysis of the effects of occupational knowledge was confined to those young men who in 1968 were no longer enrolled in school.[23]

*The Consequences of Improved Knowledge of the World of Work*

Granted that the labor market position of youth is correlated with the extent of their knowledge of the world of work, what would be the social consequences of the provision of better and more complete information generally? Would it mean simply a reshuffling of individuals among jobs as some of the advantages created by superior information are eliminated, or are there ways in which all would gain as a consequence of greater information?

Stated very succinctly, the theoretical consequences of improved knowledge of the world of work on the part of youth would be a more nearly optimal allocation of resources and--from the vantage point of individual workers—more satisfying occupational careers. In an economic system in which individuals are free to choose among occupations and specific jobs, the effective allocation of labor depends upon workers and potential workers having reasonably complete and accurate labor market information. The market's measure of the relative social importance of different occupations and different jobs is reflected in differentials in economic rewards. These differentials are relied upon to attract individuals into those occupations and jobs in which they will maximize their contribution to the social product, given their preferences for different types of work and employment settings. However, it is clear that this can occur only to the extent that workers are knowledgeable about the range of alternatives for which they might potentially qualify and of the rewards (and costs) attaching to each.

From the standpoint of the individual the importance

of accurate and complete labor market information is equally clear. Whatever one's particular employment goals, the probability of achieving them is enhanced by full knowledge of the existence and characteristics of alternative opportunities. Indeed, it would perhaps be more realistic to acknowledge that even the formulation of employment goals is substantially dependent upon an understanding of what the possibilities are.

More specifically, there seem to be at least three respects in which a general improvement in the quantity and quality of labor market information would lead to social benefits. First, Yavitz and Morse, drawing on the work of Kenneth Arrow, have shown that inadequacies in the specific labor market information available to workers may prevent competitive forces from improving the quality of work to the extent that would occur in the face of better information. Just as in product markets inadequate information among consumers may prevent a producer of a higher quality good from attracting patronage and thus compelling competitors to improve their products, so in the labor market the absence of job information may inhibit improvements in the quality of work for all workers.[24]

Second, improved labor market information—especially what has been referred to as *specific* labor market information—should permit labor markets to allocate and reallocate labor more efficiently in response to technological change and to changes in the level and composition of demand for goods and services, reducing the level of unemployment, and shifting the Phillips curve to the left. To the extent that better labor market information improves the quality of the job choices of youth in their early period of accommodation to the labor market, it should help to reduce the high turnover rates among youthful workers.[25] This, in turn, would go far toward reducing the differential in unemployment rates between youth and adults, for there is evidence that the higher

rates for young experienced workers result principally from greater turnover and therefore a higher incidence of unemployment rather than from a greater duration per spell of unemployment.[26] Moreover, better labor market information may be expected also to reduce the *duration* of unemployment by speeding up the matching of unemployed workers with available jobs.

Finally, if substantial improvements could be made in the quantity and quality of general labor market information at the disposal of youngsters and their parents, it is reasonable to believe that both educational and occupational decisions would be substantially affected, improving the match between abilities and tastes on the one hand and job characteristics on the other. It is in this respect, I believe, that better labor market information for youth would have its most substantial long-run effects, for there is every reason to believe that the character of career decisions would be modified, with beneficial consequences both for levels of productivity and levels of satisfaction with work and jobs. As Stigler has suggested, "In a regime of ignorance, Enrico Fermi would (might?) have been a gardener, Von Neumann a checkout clerk at a drugstore." [27]

Precisely how the allocation of labor and the pattern of occupational wage differentials would be affected by such changes is difficult to say, but one result might be to increase relative supplies of higher level white collar workers, with a consequent compression of occupational wage differentials. This judgment stems from the belief —in agreement with that of Lloyd Reynolds—that, given equality of opportunity, occupational wage differentials are currently larger than they need be to attract existing numbers into the higher paid occupations.[28]

It is not part of this paper's task to indicate how youths' knowledge of the world of work can be improved. Nonetheless, in suggesting that more comprehensive occupational knowledge will help to reduce inequalities

of opportunity, one cannot disregard the very real difficulties that would doubtless be involved in disseminating such information and making it effective, particularly among the disadvantaged.[29] Youngsters and their parents need to know about the range of occupational alternatives and their avenues of entry while the child is still young enough for such information to make a difference to the courses he selects and, perhaps even more importantly, to the purposefulness and seriousness with which he addresses school work. There are interesting examples of how this may be accomplished so far as students are concerned.[30] More attention needs to be given to bringing the necessary information to parents.

In addition to reducing inequality of opportunity among members of different socioeconomic strata, the kinds of labor market information referred to in this paper would also contribute to reducing inequality of opportunity between the sexes, particularly if conscientious efforts were made to provide information to members of each sex about occupations that stereotypically have been associated with the other. More fundamentally, irrespective of equality of opportunity for specific groups, adequate occupational information would have a liberating effect on the process of occupational choice for all segments of the population. We like to think in terms of free labor markets characterized on the supply side by freedom of occupational choice. The truth of the matter is, however, that in the absence of adequate information, the freedom to choose is hollow indeed.

Notes

* I am grateful to Randall H. King for his assistance in surveying the literature and to John Grasso and Andrew Kohen for helpful comments on a previous draft of the paper.

1. *Journal of Political Economy*, vol. 70, no. 5 (Supplement, October 1962), pp. 94-105.

2. Boris Yavitz and Dean W. Morse with Anna B. Dutka, *The Labor Market: An Information System* (New York: Praeger Publishers, 1973), pp. 52-54.

3. See Albert Rees. "Information Networks in Labor Markets," *American Economic Review*, vol. LVI, no. 2, May 1966, pp. 559-66.

4. Yavitz and Morse note that specific labor market information also includes information about the internal labor market of the firm in which an individual is employed—"knowledge about a complex web of personal relationships and institutional rules that make it possible for an individual to negotiate the elaborate maze of interlinked job ladders, upward, downward, and sideways, in response to changes in a firm's output levels and production processes." (*op. cit.*, p. 53)

5. See Eli Ginzberg, *et al. Occupational Choice* (New York: Columbia University Press, 1951).

6. See Simon Rottenberg. "On Choice in Labor Markets," *Industrial and Labor Relations Review*, vol. 9 no. 2 (January 1956), pp. 183-99.

7. Lloyd Reynolds, *The Structure of Labor Markets* (New York: Harper and Brothers, 1951), pp. 213-14.

8. It is worth mentioning, however, that young men appear to have better knowledge of this kind than do their middle-aged counterparts. Among men 45 to 59 years of age, three-fifths of those who said they would confine their job search to direct application were unable to specify a single potential employer.

9. Larry D. Singell, "Some Private and Social Aspects of the Labor Mobility of Young Workers," *The Quarterly Review of Economics and Business*, vol. 6, no. 1 (Spring 1966), p. 23.

10. A. P. Garbin, Robert Campbell, Dorothy P. Jackson, and Ronnie Feldman, *Problems in the Transition from High School to Work as Perceived by Vocational Educators*, Research Series 20 (Columbus: Ohio State University Center for Vocational and Technical Education, 1967), pp. 49-50.

11. Saul S. Leshner and George S. Snyderman, "Job Seeking Patterns of Disadvantaged Youth," *Employment Service Review*, November 1966, pp. 53-55.

12. D. J. Prediger, J. D. Roth, and R. J. Noeth, *Nationwide Study of Student Career Development: Summary of Results*, ACT Research Report No. 61 (Iowa City: American College Testing Program, 1973), pp. 9-11, 29-30, 34.

13. Richard Freeman, *The Market for College-Trained Manpower: A Study in the Economics of Career Choice* (Cambridge: Harvard University Press, 1971), p. XXV.

14. *Ibid.*, p. 194.

15. David Gottlieb *et al., Youth and the Meaning of Work* (University Park: Pennsylvania State University, Institute for the Study of Human Development, 1973), pp. 144-46. A brief summary of the study appears in United States Department of Labor, Manpower Administration, *Youth and the Meaning of Work*, Manpower Research Monograph no. 32 (Washington: U.S. Government Printing Office, 1974).

16. Gottlieb, *op. cit.*, p. 232.

17. *Ibid.*, p. 228.

18. For a detailed description of the test and an analysis of its reliability, see Andrew I. Kohen and Susan B. Breinich, "Knowledge of the World of Work: A Test of Occupational Information for Young Men," *Journal of Vocational Behavior*, forthcoming.

19. Herbert S. Parnes and Andrew I. Kohen, "Occupational Information and Labor Market Status: The Case of Young Men" (Columbus: The Ohio State University Center for Human Resource Research, September 1973). An abbreviated version under the same title will appear in the Winter 1975 issue of the *Journal of Human Resources*.

20. See, for example, Eli Ginzberg, *Career Guidance* (New York: McGraw-Hill Book Co., 1971), p. 194.

21. Occupational level was measured by the Duncan Index of Socioeconomic Status. See Otis Dudley Duncan, "A Socioeconomic Index for All Occupations" in Albert J. Reiss, Jr., and others, *Occupations and Social Status* (New York: Free Press of Glencoe, 1961), pp. 109-38.

22. Four ordinary least squares regressions were run, one for each dependent variable for each of the two racial groups. For hourly earnings, adjusted $R^2$'s were .19 for the whites and .31 for the blacks; for Duncan Index, the corresponding values were .40 and .36. With earnings as the dependent variable, the occupational information variable was significant at the 5 percent level for whites and at the 1 percent level for blacks; with Duncan Index as the dependent variable, the test score was significant at the 1 percent level for whites and the 5 percent level for blacks. Parnes and Kohen, *op. cit.*, p. 17.

23. I have been able to uncover only one other study that has investigated the effect of labor market information on actual labor market experience. Robert Darcy and his associates analyzed the relationship between scores on a "world-of-work knowledge" test administered to high school seniors in a Lancaster, Ohio, high school in May 1972 and several measures of their labor market status eight months later. Of the 108 individuals for whom labor market information was available, no statistically significant differences were found between the 37 subjects who had scored in the top three deciles and the 71 in the lowest three deciles. Robert L. Darcy, Richard V. Kauffman and Edward P. Milker, *Manpower Economic Education and the Transition from School to Work: Implact on a Cohort of Ohio Secondary School Students*. Report of research carried out under a grant (No. 21-58-73-29) from the Manpower Administration, United States Department of Labor (Fort Collins, Colorado: Colorado State University Center for Economic Education, February 1974), pp. 100-10.

A number of factors may account for the difference between Darcy's findings and those based on the NLS data. Darcy's sample was, of course, a very restricted one and very homogeneous, so that one would not expect as much variation in occupational information as exists in a national sample of a wider age group. Secondly, about half of the seventeen-item test of manpower and economic understanding does not really measure what I would construe to be labor market knowledge (see *ibid.*, Appendix B-2, items 1, 6, 7, 12, 13, 14, 15, 16). Finally as Darcy acknowledges (*ibid.*, p. 106), the eight-month period between administration of the test and the measurement of labor market status may not have been long enough to allow "individual differences among young workers . . . to find expression in pay differentials and other measures of job success."

For a summary of studies evaluating formal and informal teaching about occupations, see Robert Hoppock, *Occupational Information*, Third Edition (McGraw-Hill Book Company, 1967), pp. 379-400.

24. Yavitz and Morse, *op. cit.*, p. 15. Stigler has made a comparable point in showing that the social capital produced by job search may differ from the sum of the private capitals. "If most workers search intensively, employers who offer low wage rates will be unable to fill their jobs and will be forced either to close down or to raise wage rates—so if I enter the labor market and do not search, I nevertheless profit from others' knowledge of the market." (Stigler, *op. cit.*, p. 105).

25. As Richard Toikka has observed: "In light of the . . . number of parameters which determine a satisfactory job, is it any wonder that lack of information about jobs leads to a high job turnover rate among young workers?" Richard S. Toikka, "The Economics of Information: Labor Market Aspects," *Swedish Journal of Economics*, vol. 76, no. 1 (1974), p. 63.

26. Martin S. Feldstein, "Lowering the Permanent Rate of Unemployment," a study prepared for the use of the Joint Economic Committee, Congress of the United States, 93d Congress, 1st Session, September 1973 (Washington: U.S. Government Printing Office, 1973), pp. 17-18.

27. *Stigler, op. cit.*, p. 105. The parenthetical expression is mine.

28. Lloyd G. Reynolds, *Labor Economics and Labor Relations*, 6th Edition (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1974), pp. 277, 284-85.

29. Beatrice Reubens, after a comprehensive review of the literature relating to programs of labor market information both in the United States and elsewhere, concludes that there is still considerable uncertainty as to their effects, and argues for controlled experiments. Beatrice G. Reubens, *Bridges to Work: International Comparisons of Transition Services*, Chapter 5,

"Orientation and Information: Issues." Unpublished manuscript kindly made available by Dr. Reubens.

30. For some interesting examples, see Lorraine S. Hansen and Henry Borow, "Toward Effective Practice: Emerging Models and Programs" in Henry Borow (ed.), *Career Guidance for a New Age* (Boston: Houghton-Mifflin Company, 1973), pp. 187-227. The Center for Vocational and Technical Education at The Ohio State University is currently developing a variety of materials for use in grades K-12 for helping students gain a better understanding of occupational alternatives and how they relate to their own abilities and preferences. These include curriculum units for a variety of subject matter areas at all grade levels and stimulation materials designed primarily for eighth and ninth graders.

# IV

# Programs of Labor Market Information

In this, the final section of the volume, the four papers contain specific descriptions of programs involved in collecting, analyzing and deploying labor market information systems. They include a review of some of the newer thrusts in obtaining some of the information to begin with, how the information is then delivered to the client as well as the organizational implications of such new developments. Included in the last two of these papers are case histories in this field with specific, down to earth findings and recommendations and conclusions they generate.

# Occupational Data: The Foundation of a Labor Market Information System

*Russell B. Flanders*

A good labor market information system must have in its foundation reliable, up-to-date statistics on current employment, projections of future occupational requirements, and related subjects. This foundation currently exists in programs of the Bureau of Labor Statistics (BLS).

The Bureau has long been a leader in the development and dissemination of labor market information designed for use by the young. This effort began in the 1940s with a series of 3" x 5" pamphlets describing occupational opportunities in fields such as agriculture and the crafts. The first edition of the *Occupational Outlook Handbook* (OOH) appeared in 1950. The *Handbook* then, as it does today, provided young people with information about nationally important occupations and industries in a format that would assist them in making a career choice. The major subject headings, which follow the National Vocational Guidance Association guidelines for the development of these materials, include the following:

- Occupational employment. The number of workers employed nationally in an occupation indicates the size of the occupation; hence, an indication of its relative importance and the opportunities in the field.
- Occupational projections. This subject area includes information on the expected employment change in the occupation over time, usually ten years. Furthermore, it covers information on the openings expected to result from replacement needs and, where possible, an assessment of occupational supply. This is also the sector where we indicate those factors that will impact the occupation positively or negatively, such as technology and future demand for the product or service with which the occupation is associated.
- Earnings. Providing information to young people that sheds light on the life style associated with each occupation is difficult, but information on earnings is an important ingredient in this effort. In addition to wages or salaries earned, we provide, where possible, information on fringe benefits, shift differentials, and payments in kind. In the latest edition of the Handbook, we have added to the usefulness of the information by providing, where possible, a comparison of earnings among different occupations. Generally, these are comparisons among the average earnings of all nonsupervisory wage and salary workers in private industry, except farming. Other comparisons (usually wages) are made among similar occupations; for example, construction craftsmen.
- Educational and other requirements. It is important for young people to know the level and type of education and training that is required for entry into an occupation or occupational field. Not only do we provide information of this nature in the Handbook, but we make available leaflets that list occupations by the nature of education or training

needed for entry, such as four or more years of college, junior college or technical school, high school, less than high school, and apprenticeship. Since licensing is required to perform in many occupations, information is presented in the Handbook that helps young people to become aware of the special requirements that exist. Advancement opportunities are also discussed in Handbook statements, which indicate to youth those patterns of promotion which are typical within a specific occupation (career ladder) or within a field of related occupations (career lattice).

- Personal characteristics. Another essential factor in career choice is the correlation of specific personal characteristics with the characteristics of the job. To provide this information, the Handbook presents typical job characteristics for each occupation. This allows the individual to match his unique qualifications, "likes," and "dislikes" to the job. For example, the characteristics described in the Handbook statements include among others, the following:

  Responsible decisions required
  Motivates others
  Directs the activity of others
  Work is closely supervised
  Works with ideas
  Highly competitive
  Works with people
  Work is repetitious
  Helps people
  Exposed to weather conditions

For several years the Handbook was criticized because of the lack of this information and the consistent presentation of it in the occupational statements. In the preparation of the 10th edition of the Handbook, staff concentrated on this subject area. The result was a marked improvement in the amount, quality, and consistency of the information

produced. Further, we were able to publish in the Occupational Outlook Quarterly, a "matrix" of characteristics for some 250 occupations. This matrix generated more interest from career guidance personnel than any other report published in the Quarterly.

- Work performed. The information on work performed, or nature of the work, presented in the Handbook provides to the reader an insight to what the worker does and how he does it. When combined with Handbook information on working conditions, including the environment where the work is performed, the reader can determine if the work appeals to him or her, and, when related to other information on job characteristics, if the occupation would be a satisfying career choice.

The Occupational Outlook Handbook program represents a major, ongoing effort to provide youth with up-to-date, reliable information about the national labor market. It can serve as the basis for similar information developed specifically for State and sub-State areas.

In making their career choices, young people should have access to national, state, and local occupational information. The reasons are many, but several important ones should be mentioned. Many occupations, particularly in the professional area have a national labor market; therefore, national information is needed. Licensing requirements vary by occupation among States and even among communities within States; therefore, State and local information on this subject is needed. Entry requirements fall into this category since they also vary somewhat by location and so do earnings. Perhaps most importantly the openings in an occupation may vary substantially among localities, ranging from an oversupply in one area to a shortage in another. The Handbook and its related publications, then, provide a necessary nucleus to a system designed to provide young

people with up-to-date information about the world of work.

While the Bureau's Occupational Outlook Handbook Program is well known by those involved in career guidance, its younger cousin, the Occupational Employment Statistics (OES) Program is not well known. Born in 1970, this relatively new effort is designed to provide States, sub-State, and ultimately, national data on current and projected occupational manpower requirements.

The OES Program, a cooperative Federal/State effort, has three basic elements—the OES Survey, the National/State Industry-Occupational Matrix System, and the State and Area Occupational Manpower Projections Research Program. In this cooperative effort, the Bureau of Labor Statistics is responsible for the development and improvement of survey procedures and manpower projection techniques to be used by the cooperating State employment security agencies and provides a continuous program of guidance and assistance to the State agencies through its regional office system. The Manpower Administration (MA), a major partner in this effort, is responsible for the administrative aspects of the program.

*The OES Survey*

In 1970, BLS, MA, and a number of State employment security agencies initiated the cooperative Federal/State OES Survey. Currently 28 States and the District of Columbia are cooperating in this program. This is a survey program designed to produce estimates of occupational employment by industry for the entire nonagricultural wage and salary workforce. This survey of establishment employment covers a three-year cycle. For example, manufacturing industries are surveyed every third year, as are nonmanufacturing industries, except trade; and trade industries. The survey data are used to estimate total employment by occupation, by industry, for each State and for areas in each State designated by the cooperating State agency. Employment estimates are

possible in this program for more than 2,000 individual occupations covering the spectrum of skills. Although most occupations listed require some form of training for entry, the list does include entry occupations, or those requiring only a few weeks of on-the-job training.

The OES survey is important to the development of labor market information needed by youth. The survey program provides a systematic, conceptually consistent approach to data collection, employment estimating procedures, and occupational and industry classification at the national, State, and local levels. The data coming from the program make possible the preparation and dissemination of accurate, up-to-date information on occupational employment for use by vocational counselors and others interested in helping young people in the transition from school to work. Information from several survey cycles makes it possible to analyze the changing occupational composition of business and industry and to project industry employment patterns with greater intelligence and accuracy. Furthermore, the data provide a basis for the assessment of occupational demand and supply for more occupations than ever before. Beyond the information needs of young people, data from the OES survey have other equally important uses. For example, the data make it possible to study the effect of public and private training programs on the supply of trained workers. They can facilitate the study of the effects of shifts in public and private demand and changes in technology and industrial organization on occupational manpower requirements. They can be used to assure that local manpower conditions are adequately understood. More uses will be identified as the data becomes generally available. Already, local employment security agencies have found the survey data useful in job placement activities and major corporations have found it useful in market research. In terms of labor market information for youth, perhaps the most signifi-

cant application of the data is the development and improvement of industry-occupational matrices (discussed below) at the State and area levels and, ultimately, at the national level.

*The National/State Industry-Occupational Matrix System*

The industry-occupational matrix has for over a decade been a principal tool in the preparation of national projections of occupational employment. The present national matrix shows employment in 420 detailed occupational categories, cross-classified by 201 detailed industry sectors and six class-of-worker categories. Both occupational categories and industrial sectors are exhaustive so the matrix is comprehensive of all employment. Viewed another way, the matrix illustrates the occupational profile, or percentage distribution, of employment in each industry sector. These profiles, or occupational patterns, vary substantially since each industry will seek to utilize a certain combination of labor skills in its production function.

It has generally been hypothesized that the occupational structure of many industries remain relatively stable over time. Consequently, if reliable data are available on the occupational composition of individual industries for a base period, these data can be applied to projections of total employment by industry to yield initial projections of occupational employment for a target year.

In many industry sectors, however, occupational patterns do change significantly over 5 to 10 year periods with the advance of technology, changes in the supply of workers, changes in wage structure, and other factors. Hence, information on the influence of these factors is used to modify the occupational patterns of the individual industries. Therefore, in actual practice, the adjusted, or projected, occupational patterns are used together with projections of employment by industry (developed

exogenously from the matrix), to prepare projections of occupational employment.

Although the matrix concept is a relatively simple one, it could not be used effectively in the Bureau's manpower projections effort until the advent of electronic computer. What used to take many months to accomplish, including updating, revisions, and iteration can now be accomplished in a few weeks and, in some situations, days. With this development the system became exportable.

The National/State Industry-Occupational Matrix System is being developed with the cooperation of MA and the State employment security agencies. The first goal of the system is to provide an employment matrix for each State and the District of Columbia that is consistent in format, concept, and data base with the BLS national matrix. This step is near completion. Another original goal was to provide a flexible, multipurpose computer system that would allow a State, for example, to update its matrix, prepare sub-State matrices, and generate projections of occupational requirements. This goal has recently been modified to include a system that can be centralized to provide data processing services for the individual States at one or a few locations. Furthermore, the complete system will make it possible to supplement the 420 by 201 order matrix with more detailed industry and occupational data obtained through the OES survey. Current plans call for the system to be operational in FY 1976.

While the matrix system has been in the development stage, the Bureau has completed what is referred to as the Interim Area Manpower Projections Project. This project, again conducted in conjunction with MA, was designed to provide State employment security agencies with State and sub-State occupational projections for the FY 1975 manpower planning cycles. More specifically, a modified matrix technique was used that involved directly applying the industry staffing patterns of the

national matrices for 1970 and 1980 to their corresponding detailed estimates of base year and projected industry employment for the State or area. Each set of results was then summed across industries to obtain occupational totals and a change factor from base year to projected year was computed. Projections for each occupation were derived by applying these change factors to separately estimated base period occupational employment levels. Thus, the State and area projections were developed within the context of national economic and technological trends, using two factors believed to be most important in estimating occupational change—industry growth or decline and shifting occupational patterns within industries. While the procedures admittedly have built in bias, tests using the full matrix system suggest that for most situations the direction and magnitude of change derived through the modified approach were essentially the same. Because of problems of projection reliability and constraints on the availability of Census of Population data, we did not process projections for areas with less than 250,000 population.

As a result of this interim effort, 48 states now have projections of requirements for 420 occupations that are conceptually consistent and compatible with those in other states and with national projections. In addition, the project produced projections for more than 100 areas with a population of 250,000 or more, which are compatible with the state projections.

*The State and Area Occupation Manpower Projections Research Program*

Effective November 1972, BLS was charged with the responsibility for providing consultation and technical assistance to State employment security agencies in making state and area occupational manpower projections. This assistance program requires a continuous research program to develop and improve methods of preparing State and local manpower projections. Fur-

thermore, it includes the development and maintenance of technical manuals, guidelines, and other appropriate materials related to the projections process for the use of the State agencies.

The scope of the research in this program is broad. Not only does it involve the development and testing of techniques to improve the reliability of occupational demand data generally, but it also includes research into such areas as the feasibility of making short-term projections and projections for geographic areas with a population of under 250,000. While the Bureau's recent efforts have concentrated on the development of requirements data, work has begun on the problem of occupational supply. In the months ahead, research will be carried out on occupational mobility and geographic mobility of occupational employment. The knowledge obtained from the Survey of Training in Industry project will be made available to States so they can develop comparable data. More work needs to be done in the development of occupational death and retirement rates, the assessment of occupational supply and demand, and the most beneficial ways of presenting occupational manpower data to each of the various users, including counselors, manpower planning, and vocational education program officials.

There are numerous advantages to the development of labor market information through the programs outlined above. Importantly, the programs are continuous; not a one-time effort for a State, or part of a State. The programs are supported with a continuous research effort to improve techniques, fill the data gaps, assist State agencies, and reduce costs. The total program is designed to meet the occupational information needs of several primary users. In addition to the research needs of the Bureau, the information produced is essential to the development of national, State, and local occupational outlook data. Indeed, the information in the Occupa-

tional Outlook Handbook can be supplemented with pertinent State or local information with considerable cost savings to State and local agencies. The occupational requirements data generated through the OES Program provide the basic ingredient to effective national, State, and local manpower and educational planning, including vocational and higher education planning.

The obvious advantage of the program is that it constitutes a system that provides compatible data for all geopolitical subdivisions, and in which concepts and procedures are handled with consistency. This approach makes possible the evaluation of information produced at all levels and the interchange of experience and knowledge gained. Allowed to reach maturity, the OES program can provide the occupational information required by the vocational education legislation, the Comprehensive Employment and Training Act and the recently established Occupational Information Service (OIS) of the Department of Labor. The Occupational Outlook Handbook, in addition, provides the basic national information needed for guidance purposes in the OIS programs in the States. These programs constitute major inputs to the foundation of a Labor Market Information System.

# Organization of a Career Information System: The Oregon Approach

*Barry E. Stern*

*Introduction*

What to do when one grows up is becoming a progressively more difficult decision. The array of occupational choices, continual and rapid fluctuations in the economy, and the lack of institutional mechanisms to bring young people into frequent contact and involvement with the world of work all contribute to the confusion.

Recently, the Department of Labor announced an Occupational Information System Grants Program to help young people keep up with the rapid changes in the world of work. The program consists of grants to states and local areas to develop systems which will provide labor market facts to students and others who are in the process of career exploration and decision-making. Too many young people now make career decisions without the benefit of such facts. Providing people with reliable, up-to-date and locally relevant information on the earnings, nonpecuniary rewards, practical employment opportunities, preparation requirements, and other characteristics of alternative occupations is likely to increase their chances of eventually finding work which is both personally satisfying and financially acceptable.

In developing such a program, the Labor Department assessed several experimental projects in selected localities which incorporated information about the world of work into school guidance programs. This effort involved a review of the literature, on-site visits, attendance at professional meetings, a two-day conference on "Occupational Information and Career Guidance Systems" attended by many of the systems' developers and interested parties in the federal government, and an exploratory probe by telephone to identify lesser known projects through the country which were using innovative techniques to gather, appraise, and disseminate occupational information to students.

As the process developed, it became increasingly clear that we were attempting to compare systems and projects that were quite dissimilar in terms of their underlying assumptions about what students needed to support intelligent career exploration and choice. With some systems the focus was on the computerization of a particular guidance process which subscribed to one counseling theory or another. Others focused purely on the mechanics of information retrieval, giving short shrift to complex processes which attempted to match personal and occupational characteristics. Some emphasized both the retrieval and use of information for career guidance.

Throughout the attempts to understand this complex and rapidly expanding field, the focus was on the problem from the consumer's point of view—that is, the student. This did not mean putting computerized guidance systems in every school nor setting up comprehensive statewide labor market information systems for manpower and education planning. Aside from the extraordinary amount of money that would be required to do either, we felt that the need to provide consumers with better, useful occupational information deserved higher priority.

It is possible to become so impressed with the cap-

ability of the computer to store, retrieve, and sort through and interrelate masses of data that it takes precedence over the needs of people who must make career and job choices. Metaphorically speaking, we have a situation where the "cannon" for delivery is far better developed than the "shell" of information.

Recognizing the fact that an information system is no better than its information base, a central feature of the Department's grants program is to develop in each participating state and local area an information base which is worthy of the sophisticated methods of dissemination which are now available. The point that guidance personnel make, that "information is not enough," is true, but process is no substitute for content—without a good data base the vehicle for information retrieval and dissemination is of limited value.

This program does not call for the production of more occupational data. Instead, it will attempt to break out existing, user-oriented occupational information from the larger labor market information perspective that emphasizes economic analysis, research, and manpower planning. This is not to say that the Labor Department will cease in its efforts to collect more information so as better to estimate occupational demand in local areas. Obviously, the efforts to improve and extend methodologies to obtain local labor market information will continue. The Occupational Information Systems Grants Program is conceived as a parallel effort to disseminate existing occupational data in usable form to individuals making career and job choices. The possible expansion of the grants program to more than the eight to ten states which will be funded initially forces the Department to look at the tradeoffs between generating new statistical materials and disseminating more vigorously what is already available.

Precisely how manpower and educational planning information needs differ from the needs of consumers

making vocational choices is described later in the paper. A similar important distinction will be made between the nature of information for career decisions and job acquisition decisions. Despite the fact that both are consumer decisions, a case will be made for keeping career information separate from job information, at least conceptually.

Prior to speculating on the linkages between career, job, and planning information, an attempt will be made to identify the key components of an idealized career information system. Many of the more prominent systems in use possess in varying degrees several of these components and will be cited from time to time as examples. There is no intention, however, to list and categorize each of the dozens of occupational information and career guidance systems, past and present. This has already been done by several experts in this field.

For example, Harris[1,2] and Kroll[3] have classified the more prominent computer-based systems, while Super[4], Weinstein[5] and Willingham et al.[6] provide more inclusive listings.

*Components of a Career Information System*

Perusal of the various developmental projects throughout the country which have contributed to the current Department of Labor grants program reveals at least three components of a career information system: (1) informational development; (2) information delivery; and (3) an organizational structure to accomplish the above.

*Information Development*

*Career Information Topics*

There are two types of career information, namely, (1) occupational information and (2) education and training information. Occupational information is the kind needed for vocational choice. Education and training information is needed by the person who has made at least a tentative vocational decision and desires some

formal schooling or training to prepare himself for entry or reentry into an occupation or group of occupations. Chart 1 details the specific topics for these two kinds of career information.

Chart 1. Career Information Topics

A. Occupational Information Topics
   1. Descriptive Information About Occupations
      a. Dictionary of Occupational Titles six-digit code numbers for identification purposes.
      b. Job duties or tasks.
      c. Special tools, equipment, or instruments used on the job.
      d. Identification of other occupations that have similar skill or knowledge requirements.
      e. Opportunities for promotion, career advancement, and, hiring channels.
   2. Economic Information
      a. Number of workers in the occupation and related data —industry employment, geographic distribution, self-employment, sex, etc.
      b. Outlook, including projections of demand, supply (if possible), relationship of supply and demand, and factors that affect outlook (technological, demographic, or economic).
      c. Earnings (beginning and average earnings and ranges)
      d. Fringe benefits (vacations, insurance, etc.)
      e. Costs to workers (union membership, tools and equipment, etc.
   3. Personal Requirements of the Occupation: interests, aptitudes, temperaments, abilities, and physical qualitiec that can be related to characteristics of the occupation (e.g, requirements for lifting, working with detail, ability to see results of work, etc.)

B. Education and Training Topics
   1. Preparation Requirements of the Occupation
      a. Skill and knowledge requirements for successful job performance.
      b. Legal qualification for employment, e.g., licenses, age, bonding, etc.
      c. Ways to prepare for entry into occupation, including formal training and/or experience *required* for licensing, *preferred* by employers, and *conventionally accepted* as ways to prepare.
      d. Hiring practices, i.e., description of the sequencing of the employment queue.
      e. Ways to prepare for advancement.
      f. Tips for improving preparation (e.g., relevant summer employment).

2. Related Post-Secondary Educational and Training Programs, Including Apprenticeships
   a. Types of programs, including degree options and specialties.
   b. Kinds of schools offering the program.
   c. Length of programs and degrees or certificates offered.
   d. Occupational emphasis of program, if any, including similarities or differences between programs.
   e. Examples of courses contained in curriculum and methods of instruction.
   f. Gross reference to related programs.
   g. List of schools which offer program.
   h. Other information, including special costs, program schedule, prerequisites, etc.
3. Institutional Characteristics of Two- and Four-Year Colleges in state.
   a. General information, such as type of school, degrees offered, schedule of classes, correspondence courses, locations, population, nearest large city, etc.
   b. Enrollment, including by sex, full-time and part-time, out-of-state students, new students.
   c. Minority enrollment—total, Afro-American, American Indian, Asian-American, Spanish surname.
   d. Contact person and visiting procedures.
   e. Foreign study.
   f. Honors program.
   g. ROTC.
   h. Special programs, including ethnic and women's studies.
   i. Alternative credit opportunities.
   j. Class size—freshmen
   k. Graduation requirements.
   l. Grading system(s).
   m. Admission requirements and procedures — freshmen and transfer.
   n. Special admissions—minorities, adults, etc.
   o. Housing — dormitories, coop, fraternities, off-campus, married students.
   p. Costs—single and married students, part-time.
   q. Financial aid—types available, application procedures.
   r. Part-time jobs.
   s. Services for all students.
   t. Special services for athletes, disabled, low-income, older, minority, veterans, and women.
   u. Health services.
   v. Day-care facilities.
   w. Library facilities and use.
   x. Bus service to school.
   y. Availability of student parking.

In addition to providing and maintaining files containing information related to the topics listed in Chart 1, a few of the occupational information and career guidance systems refer the student to other sources of information. These include bibliographies of reference materials about occupations for the students; taped interviews with workers; films or filmstrips about workers; names of local people who are willing to discuss their occupation with students considering it and procedures for visiting them; and sources of additional information which can help with occupational exploration and job placement, such as state employment services, unions, professional and trade associations, cooperating employers, and the location of other material such as career briefs, books, and cassettes.

*Level of Geographic Specificity*

To the extent labor market conditions warrant, items or topics of occupational information should be localized, particularly such change-sensitive topics as employment outlook, training opportunities, and earnings. To be sure, national occupational information is still needed to provided a broad perspective of the labor market. For the great majority of individuals, however, career decisions are based more on local than national labor market conditions. The state and local occupational information systems to be funded by the Department of Labor, therefore, will cover all occupations within that state that have any significant amount of employment. The universe of occupations should be covered as fully as possible to give the user a broad view of occupational opportunities on both a state and local area basis.

*Accuracy and Currency of Information*

In addition to tapping the usual national sources for occupational information, such as the *Occupational Outlook Handbook*, and *Quarterly*, the *Dictionary of Occupational Titles*, and the *Census*, an ideal career information system would also need to obtain information

from a wide variety of authoritative sources which can provide state and local information as well. These would include such agencies as state employment security (ES) agencies, departments of education and commerce, bureaus of apprenticeship, planning bodies, employer and labor organizations, professional associations, and city and county governments. Among the kinds of data available are occupational projections, occupational employment statistics, special wage surveys, unemployment insurance tax records, apprenticeship reports, compensation and fringe benefits reports, ES job bank openings summaries and other ES job search information, reports of graduates and training course completions, and the identification of licensed occupations in a state.

Thus, useful and relevant data from all sources and agencies would be collected, appraised, and disseminated under one roof in contrast to the present situation, where these activities are diffused. This is not to say that occupational data and information would necessarily be produced by these systems as well. Systems supported by Department of Labor funds, at least, will leave actual data production to those federal and state agencies having responsibility for this. The occupational information systems under this program are expected to make maximal use of the occupational data that already exists. Moreover, they must include on their respective staffs individuals with appropriate professional skills (e.g., labor economics) to identify and appraise these data and put them into disseminable form. A central element of a career information system, then, is a continual review and rapid updating of information so that it reflects the realities of today rather than the record of yesterday.

If the provision of reliable, up-to-date, and locally relevant occupational information is to be taken seriously, the employment of individuals professionally qualified to find, compile, and appraise various sources of occupational information is essential. Such individuals

should have some training in labor economics and occupational analysis. Unfortunately, however, information development in many of the systems is characterized by a single individual with a journalism or counseling background who is employed by the school district to develop and update yearly information on some 200-400 occupations in the state or metropolitan area. Their information product too often misinforms students about the world of work.

*Length and Detail of Information*

Occupational descriptions should be provided that include most of the information topics previously identified. Provision ought to be made to vary the length and detail of the information presented in order to accommodate the user who wants an overview of an occupation as well as the user who wants a great deal of specific information. Ideally, flexible and alternate kinds of data files would be available, versatile enough to serve several kinds of users.

*A Comparison of Prominent Systems on the Various Dimensions of Information Development*

The matrix on Chart 2 attempts to provide a normative typology of information development attributes by which the leading career guidance and information systems can be compared. It should be noted that the quality and amounts of occupational information delivered is not central to the purposes of a number of the systems. A normative typology, nonetheless, is useful to those who want a better feel for what the different systems do and do not do in terms of providing useful career information to students.

The acronyms of eight of the leading guidance and information systems appear on the vertical axis of the matrix and a set of normative information development attributes appears on the horizontal axis. (The acronyms are spelled out at the end of Chart 2). The attribute called "Job Search Information Available" is not a nor-

mative attribute for career guidance; it is included here to indicate that information about specific job opportunities and employers should be made available to the student who for the time being is satisfied with the extent of his career exploration and is job ready. Although job search information is available in most communities, e.g., through the local employment security office, it normally is not available in the schools. A total system which would make both career and job information available in the school or other user agency would be ideal.[7] One way to do this is to have both a career information system and a job bank from the employment service as part of the total system, with a mechanism to refer the user (e.g., student) from one to the other depending on his needs.

The following generalizations about information development in career guidance and information systems can be gained from Chart 2.

1. Most of the systems cover a wide range of occupational topics but with the exception of OIAS, VICS and VIEW the spectrum of occupations covered is not related to significant employment in the state or locality served by the system.

2. The kinds of education and training information provided varies considerably from system to system. For example, include the general preparation requirements for entry into each occupation, although OIAS, VIEW (in California), and GIS (in Minnesota) are the only systems which detail state education/training information.

3. Occupational information provided varies significantly among the different systems. For example, VICS provides local but little state or national information, VIEW provides local and sometimes state and national information, and CVIS, ECES and GIS provide national information only (they purchase this information from commercial firms and depend on them for update). Of

Chart 2
Information Development Attributes of Leading Career Guidance and Information Systems

| System | Information Topics and Coverage of Occupations | Localized and State as well as National Occupational Information | Accuracy and Currency | Brief Overview of Occupation Provided | Referral to Other Sources of Information | Job Search Information Available |
|---|---|---|---|---|---|---|
| OIAS | • Most occupational information topics covered for most occupations in Oregon and other significant occupations outside State when data available.<br>• Coverage of post-secondary institutions limited to Oregon. | • Both State and local information about occupations and education/training.<br>• 5-person research staff compiles information for all major labor market areas in Oregon. | • Continual review and yearly update of occupational and education-training information when new data available.<br>• Occupational review panels to validate information. | • H : 300 word occupational brief for each occupation in file. | • Bibliography of reference materials about occupations.<br>• Taped interviews with workers<br>• Names of local people who : an discuss occupat.-a. | No. |
| CVIS | • Most information topics covered for wide spectrum of occupations.<br>• Has military information and national file of 1510 4-year colleges. | • No local or State occupational information.<br>• National information purchased from Ferguson and Co.<br>• Has local education, training, and apprenticeship info. for Villa Park, Illinois, other CVIS sites encouraged to obtain similar local information. | • Ferguson & Co. updates every 2 years the national occupational information it provides.<br>• College data file updated yearly by direct mailing to admission offices. | • Provides overview. | None | • List of employers in DuPage County, Ill., who offer entry opportunities in particular occupational category. |

| System | Information Topics and Coverage of Occupations | Localized and State as well as National Occupational Information | Accuracy and Currency | Brief Overview of Occupation Provided | Referral to Other Sources of Information | Job Search Information Available |
|---|---|---|---|---|---|---|
| SIGI | • Most information topics covered for wide spectrum of occupations.<br>• Detailed education/training info. for community college using system.<br>• 4-year colleges described within 300 mile radius of user community college. | • No local or State occupational information but attempt to develop regional information. | • General occupation descriptions updated yearly.<br>• Change-sensitive topics like wages and outlook updated semi-annually.<br>• Information review and update performed by an occupational information specialist and 2 ETS Research Asst's. | • Provides brief description of job duties and tasks.<br>• User can compare 3 occupations on a single topic (e.g., wages, outlook, etc.) | • Referral to trade and professional associations. | No. |
| GIS | • National college data base is comprehensive; includes 2-year and 4-year colleges.<br>• Most occupational topics covered for wide spectrum of occupations.<br>• Data bases uneven in their comprehensiveness and quality. | • New version (GIS II) has capability to include local/state infomation but only national occupational information is provided by system. | • College data base updated yearly.<br>• Occupational file updated as frequently as major sources of national information, such as *Dictionary of Occupational Titles* and *Outlook Handbook*. | • Provides overview. | • Referral to trade and professional associations.<br>• Bibliography of reference materials about occupations. | No. |
| ECES (Newest Version) | • Most information topics covered for wide spectrum of occup. tions.<br>• Has national file of 2-year and 4-year colleges and 1-year technical schools. | • National information culled from *Occupational Outlook Handbook* and from OTIS information purchased from Oklahoma.<br>• VIEW system in Michigan will provide some State & local information. | • No verification procedures, i.e., no reconciliation of information from different sources. | • No, student must read a considerable amount of material to cover information topics for each occupation. | • One-day work internship available to student who has made tentative career choice after interacting with system. | No. |

| System | Information Topics and Coverage of Occupations | Localized and State as well as National Occupational Information | Accuracy and Currency | Brief Overview of Occupation Provided | Referral to Other Sources of Information | Job Search Information Available |
|---|---|---|---|---|---|---|
| VICS | • Most information topics covered for wide spectrum of occupations. | • Both occupational & education/training information geared to Philadelphia labor market.<br>• 2½ FTE counselors from school system collect, appraise, and write-up information. | • Yearly review and update of all information.<br>• Produce much of own information through mail-outs, phone calls, and personal visits.<br>• Weak verification procedures. | • Provides overview.<br>• User can access information topics singly or collectively. | • Where in Philadelphia one can be employed in occupation.<br>• Names of people in schools outside Philadelphia to obtain information. | • 4,000 local employers with addresses listed, each with employment skills and educational requirements necessary for entry level positions. |
| VIEW | • Most occupational information topics covered for occupations with significant amount of employment in local area.<br>• Has preparation requirements, but no education program characteristics.<br>• Descriptions of 2-year and 4-year colleges in California. | • Local and occasionally State information provided, depending on VIEW site. | • Most VIEW projects have yearly review and update of information.<br>• Produce much of own information through mail-outs, phone calls, and visits.<br>• Some VIEW systems have better verification procedures than others. | • Provides overview. | • Depends on which VIEW site. Generally provides referral to professional and trade associations. | No. |

| System | Information Topics and Coverage of Occupations | Localized and State as well as National Occupational Information | Accuracy and Currency | Brief Overview of Occupation Provided | Referral to Other Sources of Information | Job Search Information Available |
|---|---|---|---|---|---|---|
| AEL/ CIS | • Most occupational information topics provided for wide spectrum of occupations.<br>• No education/ training information, except for general preparation requirements. | • National information is culled from *Occupational Outlook Handbook, Dictionary of Occupational Titles,* and *Encyclopedia of Careers.*<br>• No systematic development of local/ State information. Occasional acquisition of locally relevant occupational materials. | • Same updating problems as national sources mentioned.<br>• No systematic verification and update of locally relevant occupational materials. | • Provides overview. | • Referral to 15 career guidance units, but limited in information content. | No. |

OIAS | Occupational Information Access Program developed at University of Oregon from grant from U.S. Dept. of Labor.
CVIS | Computerized Vocational Information System, Willowbrook High School, Villa Park, Ill.
ECES | Educational and Career Exploration System, originally designed by IBM, modified and implemented by Genesee County, Mich.
GIS | Guidance Information System of Time Share Corporation and Houghton-Mifflin.
SIGI | System of Interactive Guidance and Information, under development at Educational Testing Service, Princeton, N.J.
VICS | Vocational Information Through Computer System, Pennsylvania Dept. of Education.
VIEW | Vital Information for Education and Work, operating now in 25 states.
AEL/ CIS | Appalachia Educational Laboratory Career Information System developed at Appalachia Educational Laboratory, Charlestown, W. Va.

the systems which provide localized, regional occupational information, some work predominantly with existing sources of occupational data, whereas VICS and VIEW produce much of their own data.

4. With the exception of ECES, all of the systems provide an overview which covers most, if not all, of the information topics for each occupation.

5. Most of the systems include referral to other sources of information. These sources vary from other occupational materials to names of firms and/or people in the local community who can help with further occupational exploration.

6. With the exception of VICS, job search information is not provided by the systems.

*Information Delivery*

The delivery of occupational information to users includes two broad functions: accessing and dissemination. *Accessing* refers to the approach used by an individual to search out and explore occupational information. The person can obtain specific information directly or can engage in some sort of structured search process which would enable him to generate lists of "appropriate" occupations to explore by relating occupationally relevant interests, abilities, values, etc., to the universe of occupations. *Dissemination* refers to how and through which media occupational information is presented or made available to users.

The systems which have been developed during the last few years include a wide variety of both accessing and dissemination procedures. The almost total absence of studies which compare the performance of the different systems in achieving at least some of the admittedly few goals they have in common makes it impossible to conclude that any one delivery system is better than any other. For this reason the Department of Labor's guidelines for the delivery component of the systems it will fund are extremely flexible and much less prescriptive

than the standards it sets for information development.

There are a number of standards, nonetheless, which seek to guarantee to all users easy access to the information contained within the system. Thus, system components should be user-operable in order to foster independent usage and should be as accessible as possible in a variety of settings throughout a user agency's regularly scheduled day. Varied media and formats for information presentation also should be used to accommodate the different media preferences of users who should be able to retrieve desired information reasonably soon after engaging the system and walk away from the system with a copy of at least a summary of the information.

Related to the factor of easy access and quick retrieval of attractively packaged information is the problem of compatibility of information delivered by different media. If a school gets occupational information to students via pamphlets as well as computer terminals, for example, it is important that information on the same occupational topics (e.g., hourly wages) be consistent. The compatibility problem is most likely to arise in schools which never throw away outdated occupational materials. Hopefully, the newly forming state and local occupational information systems will provide high schools with the courage to clear their shelves of materials which misinform rather than inform.

Also included as essential elements for information delivery are certain guarantees of privacy and confidentiality of personal data. These become particularly important in systems which attempt to match client characteristics such as academic achievement, aptitudes, values, and measured interests with occupations to be explored. When these are inputted to the system, they must be adequately safeguarded so that their security and confidentiality will be maintained. Clients should be aware of all personal data which are in the system and should be able to get any occupational information from

the system they desire, regardless of what information their test scores, interest inventories, etc., say they need.

Given the absence of comparative evaluation data, the development of a matrix of systems and normative attributes for information delivery would be premature. For descriptive purposes, however, it might be useful to present a typology for the information delivery component of the various career guidance and information systems. This typology appears on Chart 3. The following generalizations about information delivery in career guidance and information systems can be inferred from Chart 3.

1. Most of the systems listed permit a direct accessing of information. Three of the computer-based systems involving rather complex structured search strategies do not.

2. All but one of the systems (the microfilm-based VIEW) provide for a structured access of the career information.

3. Three (SIGI, ECES and CVIS) of the computer-based systems input a variety of student records, such as test scores, class rank, and grade-point average, to help the student ascertain the probability of successfully completing courses or curricula related to his occupational choice. Of these, only SIGI validates these probabilities through the use of locally-built experience tables which relate high school course or test performance with post-high school course performance.

4. All but one of the systems (ECES) enable the user to obtain the information he needs before leaving the system. Of these, most provide a copy of at least a summary of the information to the user.

5. Most information delivery vehicles in most of the systems have compatible information, due to the fact that only one or two vehicles are used generally to deliver the information. The greater the number of outside information sources—for example, pamphlets and books

Chart 3

| | Dissemination Media | Accessing Strategy to Obtain Occupational Information | | | | Immediacy of Retrieval | Copy of Information to User | Compatibility of Different Information Sources |
|---|---|---|---|---|---|---|---|---|
| | | Direct Access | Structured Access | | | | | |
| | | | Available | Basis of Matching Personal and Job Characteristics | Use of Student Records to Predict Success in Training for Occupation | | | |
| OIAS | • Computer teletype-writer terminal.<br>• Needle-sort cards with computer dumps bound in book form. | Yes | Yes | Worker Traits | None | Obtains information before leaving system. | Printout belongs to user. | Computer dumps collated and bound in book form every 3 months. Must return old dump in order to get new one. |
| CVIB | • Computer cathode ray tube, sometimes with printer, or teletype terminal. | No | Yes | Roe's classification system which relates preference within 8 Interest Areas to amount of post-secondary training desired. | • Class Rank<br>• Achievement Test Scores<br>• Kuder Interest Inventory | Obtains information before leaving system. | Printout, if available, belongs to user. | Only one source in system. |
| | • Computer cathode tube with printer. | No, but after first use of system, a type of direct access is provided. | Yes | Values, as clarified by playing values game which presents series of dilemmas | • High School Class Rank<br>• Selected Achievement Test Scores.<br>• Selected Marks<br>• Biographical and other data (e.g., self-estimates on factors for success identified by instructor) | Obtains information before leaving system. | User can select certain portions of interaction with computer to be printed. | Only one source in system. |

| | Dissemination Media | Accessing Strategy to Obtain Occupational Information | | | | Immediacy of Retrieval | Copy of Information to User | Compatibility of Different Information Sources |
|---|---|---|---|---|---|---|---|---|
| | | Direct Access | Structured Access | | | | | |
| | | | Available | Basis of Matching Personal and Job Characteristics | Use of Student Records to Predict Success in Training for Occupation | | | |
| GIS | Computer teletypewriter terminal. | Yes | Yes | Worker Traits + Office of Education's 15 Occupational Clusters. + Desired amounts and kinds of post-secondary education. | None | Obtains information before leaving system. | Printout belongs to user. | Only one source in system. |
| ECES (New version) | • Computer cathode ray tube with (color) microfiche reader. | No | Yes | • Interest as measured by Ohio Vocational Interest Survey, as well as self-estimates. | • Self-estimates of aptitudes and abilities. • Grade point average. | Must use system for several hours before obtaining information. | Not available | Only one source in system. |
| VICS | Computer teletypewriter terminal. | Yes | Yes | • Values (self-estimates) Roe's classification system which relates preferences within 8 Interest Areas to amount of post-secondary training desired. | None | Obtains information before leaving system. | Printout belongs to user. | Only one source in system. |
| VIEW | Various microforms, including: —microfiche —aperture cards —cassettes with reader or reader-printer | Yes | No | (not applicable) | (not applicable) | Obtains information before leaving system. | If reader-printer available, user can get printout. | Often located in career resource centers with printed materials which are not compatible with microfilm information. |

| | Dissemination Media | Accessing Strategy to Obtain Occupational Information | | | | Immediacy of Retrieval | Copy of Information to User | Compatibility of Different Information Sources |
|---|---|---|---|---|---|---|---|---|
| | | Direct Access | Structured Access | | | | | |
| | | | Available | Basis of Matching Personal and Job Characteristics | Use of Student Records to Predict Success in Training for Occupation | | | |
| AEL/CIS | • Various printed materials which are cross-indexed with one another.<br>• Needle sort cards which refer to other printed sources. | Yes | Yes | Worker Traits | None | Obtains information before leaving system. | Must Xerox pages from printed materials if copy desired. If view used, microfilm reader-printer provides copy. | No attempt made to make locally relevant printed or microfilmed materials (CAIVRS) compatible with one another. |

as well as computer-delivered information—the greater the chances for incompatibility. Also, the chances for providing incompatible or inconsistent information are greater when the systems attempt to provide both national and local occupational information and not just one kind or the other.

*Organizational Structure*

The development and efficient dissemination of high quality career information requires a great deal of cooperation between the local and state agencies which provide the basic data and the agencies which use these data. This cooperation must be built into the organizational structure of the career information system.

In this regard the Department of Labor has been very impressed with the effort made by the Oregon Career Information System. Many of the organizational features of the Oregon system which promote cooperation between data producers and users have been incorporated into the Department's standards for its Occupational Information Systems Grants Program.

Borrowing from the Oregon experience, the Labor Department program requires the establishment of a policymaking directorate or consortium which represents the key user and producer agencies of occupational information—namely, schools, manpower agencies, and business and industry. Minimally, the director of the state's employment security agency, the state's chief school officer(s), and some local school district officials, or their designated representatives, should serve on the directorate. Representatives from employers, organized labor, state or local planning offices, and nonschool user agencies such as manpower training and social service agencies may serve as well.

One of the more obvious reasons for having a broadly representative directorate is to provide some consumer control over the information produced and the way it is delivered. Another important reason is to assure the in-

tegrity of the information. Interest groups are very concerned about the way certain occupations are represented to the public. State and local career information systems will be susceptible to the same kinds of complaints that the editors of the *Occupational Outlook Handbook* have been getting for years, but the state and local systems may be much more susceptible due to their greater accessibility. A career information system's governing body, therefore, must be prestigious and powerful enough to prevent special interest groups from scuttling the system's mission to "tell it like it is." [8]

A staff consisting of a director and experts in the fields of information development and user services would report to this policymaking board. A wide range of academic disciplines and work skills would be represented on the staff, including labor economics, career counseling and education, research and evaluation, and public administration/business management. Information developers would seek; obtain, analyze, and appraise occupational information from a variety of published and unpublished sources and from interviews, and synthesize the information into concise occupational statements. In addition, they would direct the continual updating of the preparation of new system components. User services specialists would explain and publicize the system to potential user agency representatives, conduct in-service training for counselors and other user agency staff, negotiate contracts, and evaluate delivery system components.

The dearth of qualified people with adequate experience in the field of labor market information requires that considerable technical assistance and training be provided to these fledgling occupational information systems. A new National Occupational Information Service has been established in the Manpower Administration in Washington to provide this assistance as well as to administer the grants program generally. One major activ-

ity of this new office will be to sponsor Training Institutes for Occupational Information Development and Utilization. These will provide high level instruction to occupational information specialists who serve state/local occupational information systems, school districts and manpower organizations. The national office will also provide a clearinghouse for organizations and individuals wanting to know about current national, state and local efforts to develop and disseminate occupational information.

Final comments on the organizational aspects of a career information system presented here bear on costs and financing.

With respect to costs, it is important to make a clear distinction between information development and information delivery costs. The former depend primarily on the number, size, and occupational complexity of local areas for which information will be developed, whereas (total) information delivery costs depend on the number of agencies which use the system and the mix of delivery system media represented among these user agencies. The greater the number of user agencies and the more sophisticated and complex the delivery systems being used, the greater the likelihood of delivery costs exceeding information development costs. This is almost always likely to be the case, particularly where the system is intended to serve large numbers of users.

Information development costs are remarkably low considering the utility of the information and the wide range and number of potential users. Our smallest states, if the Oregon example is generalizable, could set up the occupational information component of the system, for approximately $200,000 and the education-training information component for about half again as much, yielding a total information development cost of $300,000. The information development costs for our largest states, like California and New York, would require approxi-

mately twice the expenditures of the smallest states. Again, it should be remembered that these figures represent the cost of developing information from existing sources. Systems which (unwisely) attempt to produce significant amounts of their own data (through mail-outs, phone surveys, and personal visits) will obviously cost more than those which rely, for the most part, on existing sources.

A major dilemma for a career information system concerns the relative emphasis to be placed on the development of education-training information as opposed to occupational information. Though there is much logic to giving priority to occupational information, pressures to provide comprehensive educational information could well attenuate such a priority. Such a dilemma is less likely to occur in those states already possessing detailed education-training data. In those states which have relatively poor educational data, however, additional financing to produce these data would be required in order to preserve the integrity of the effort to develop high quality occupational information.

The way out of this dilemma is to provide sufficient funds to develop both kinds of information. Cooperation between the Departments of Labor and HEW could be effective in this regard. The Labor Department Grants Program will be supporting primarily occupational information development. A superb opportunity exists for HEW (e.g., the Office of Education or the Fund for the Improvement of Post-Secondary Education) to provide parallel funding to the same states to develop the companion educational materials. That addition would make the program much stronger than it can possibly be with primarily occupational information and only the support of the Labor Department. Once the initial data bases for occupational and educational information are developed and the state systems are in place, phase-out of federal funding from both agencies could be accomplished and

the updating of information files could be subsidized by the state or by a schedule of user fees. This is precisely what has occurred in Oregon: the Labor Department provided funds for occupational information development; HEW's Fund for the Improvement of Post-Secondary Education (FIPSE) provided funds to develop the education-training file; both agencies phased out their funding, and the updating of the information is now being financed by user fees.

Related to the issue of how to finance a career information system is the issue of how to make the system most responsive to the consumer. The frequent submission of the system to the market test through various cost-sharing mechanisms is a promising way of assuring responsiveness. User agencies such as schools will not assume the delivery or equipment costs nor a portion of the information development costs if they perceive the information to be of no value to their clients. State and local governments will not seek to renew annually their federal grants and gradually take over the funding themselves if the program is not viewed as worthwhile. The gradual phase-out of federal funding, then, coupled with the local financing of information delivery from the outset is likely to result in effective, efficient career information systems or none at all.

In summary, the combination of cooperative institutional arrangements and the user fees charged for the development and delivery of occupational information will provide some consumer control over the information produced and delivered. Hopefully, the Labor Department's Grants Program, which incorporates the feature of consumer control through cost sharing into its standards and guidelines, will serve to bring into better balance the generation and dissemination of occupational data. The insatiable demand of planners and academics for more data must be tempered with the need to disseminate existing occupational data in usable form to

individuals making career and job choices. For every dollar spent on generating new statistical materials, a thought should be given to the relative cost of disseminating what is already available.

*Information for Job Choice*

There is an important distinction between the nature of information needed for career decisions and job acquisition decisions. First, the job seeker needs information about specific job openings whereas this would not be needed normally by people making a career decision but not yet prepared to enter or reenter the labor force. Second, the job seeker usually wants outlook and wage information which is much more highly localized than that required by the person who is in the process of career exploration. For example, career decisions are more likely to be influenced by outlook information which pertains to a cluster of Standard Metropolitan Statistical Areas (SMSAs) in a number of adjacent states than by highly localized or sub-SMSA outlook information, whereas the opposite would be true for most individuals who are actually searching for a job.

Job Bank listings, the Job Bank Openings Summary, newspaper ads, trade and professional association journals, government jobs and announcements, and school and college bulletins provide the kinds of job search information that would not normally be included in a career information system. Such job information would include: (1) employer information, including address, telephone number, whom to see about a job, and data on testing (e.g., ability, aptitude, and personality tests required for employment); (2) job description, including duties, special skills required, working conditions, physical demands, location of worksite(s), etc.; (3) wages and benefits; (4) desired applicant characteristics. (The above are provided by Job Bank listings.) (5) DOT titles and codes and employer job title; (6) openings unfilled 30 days or more; (7) job opportunities in the

same field in other parts of the state as well as in surrounding states. (Numbers (5), (6) and (7) are provided by the Job Bank Openings Summary.)

Though career and job choice and their respective information components are obviously related, they should be kept separate from the standpoint of priorities within the (career information) system and the possible duplication of effort with other agencies, notably Employment Security. If a career information system were to serve students primarily, the development of adequate occupational and education-training information files would receive priority over the development of a job information file. If a job information service is available elsewhere, like the Employment Security office, the career information system could easily refer the potential job seeker to that service.

A job search information component for a career information system makes the most sense when the school has a placement service as well. Job orders taken by the school placement officer could be fed into the system and the student could be referred by the placement officer to the prospective employer or interviewer. One of the advantages of a career information system is that it can refer to cooperating employers to provide additional information without requiring them to provide a placement-oriented interview. The provision of employer information without a placement service or specific job orders could well result in the inundation of employers by poorly informed job seekers, thereby causing a public relations problem for the career information system.

*Information for Manpower and Education Planning*

An information system for manpower and educational planning is not the same as a system to support career and job choice. Though much of the information needed by both kinds of systems is the same, planning systems require more information pertaining to labor supply and community and state demographic and economic char-

acteristics. The kinds of labor market information required for program planning, in addition to the occupational information needed for career decision-making (see Chart 1) include the following:

1. Manpower Supply Information
   a. Programs and enrollments at various educational levels and types of schools by age, sex, race, handicap, disadvantagement, SMSA, county, and school district
   b. Program completions from most recent year by same categories (private and public)
   c. Placement follow-up from most recent year by same categories, including geographic mobility of grades
   d. Local apprenticeship training programs supply
   e. Local employer training programs supply
   f. Local military returnees supply
   g. Local supply resulting from unemployment
   h. Adjustments to local supply
      (1) Labor force migration
      (2) Labor force restraints
      (3) Occupational transfers
2. Demographic Characteristics of State
   a. Population, current and project
   b. By geographical divisions — county, city, SMSA, school district, labor market areas, etc.
   c. By age
   d. By sex
   e. By level of educational attainment
   f. By occupations and industrial attachment
   g. By income groupings
   h. By racial/ethnic backgrounds
   i. By special groups—handicapped, veterans, welfare clients, etc.
   j. Fertility patterns, birth and death rates, growth rates, life expectancy
   k. Incidences of infirmity by SMSA and county

l. Mobility patterns, immigration and emigration

3. Economic Characteristics of State
   a. Geographic distribution and mobility of industries
   b. GNP, GDP and priority goals related to industry growth
   c. Effects of technological changes by nation, state, SMSA, and county
   d. Labor force composition by age, sex, employment status, type of worker, education or special training, hours and earnings, transfers from one occupation to another
   e. Current and projected geographical distribution of work force—net expansion or contraction
   f. Number of job vacancies in occupations by state, county, SMSA, community, etc.
   g. Hard-to-fill job openings, statewide
   h. Characteristics of the unemployed by state, SMSA, county, city and appropriate subareas, e.g., age, race, sex, occupations, income level, welfare recipients, veterans, limited English-speaking ability, migrants, education level, persons displaced from work as a result of technological change or shift in pattern of governmental expenditures

Thus, while much of the same labor market information is needed by both planners and career decision-makers, a substantial amount of additional supply and socioeconomic information is needed by the planner.

Theoretically, a manpower/educational planning information system and a career information system could be merged efficaciously into a single statewide Labor Market Information System (LMIS). In such a system, the data production activities would be kept separate from data dissemination activities, but all would be part of the same system (see Figure 1).

Elements of such a LMIS have already appeared in some states. California's Manpower Management Information System Project (MMISP) is essentially a multi-agency operated system to collect, appraise, and disseminate to manpower and educational planners information which is produced by a number of data suppliers, including the Employment Development Division and the California Department of Education. With the exception of Ventura County, the information supplied by MMISP is not for the use of students. California does have several VIEW projects which disseminate occupational information to students, but this information has not been developed by the MMISP.

Oregon's consumer-oriented Career Information System and California's planner-oriented MMISP are similar in that both have a multi-agency directorate with manpower and educational agencies strongly represented. If a state had both a planning and a career information system, under a single umbrella organization, it would be well on its way toward a statewide LMIS.

The most difficult part to implement LMIS is the data production unit. Splitting off labor market information (LMI) from the State Employment Security system and educational statistics from the State Department of Education would be no easy task, bureaucratically, functionally or legally. Regardless of whether such a total statewide system is implemented, the lesson from developmental projects is clear: both planners and consumers are better served by information systems which manifest close cooperation by the producers, disseminators, and users of occupational and educational data.

*Summary and Conclusions*

The purpose of this paper has been to postulate the components of an ideal career information system and to submit to public scrutiny the basic assumptions underlying the Labor Department's Occupational Information

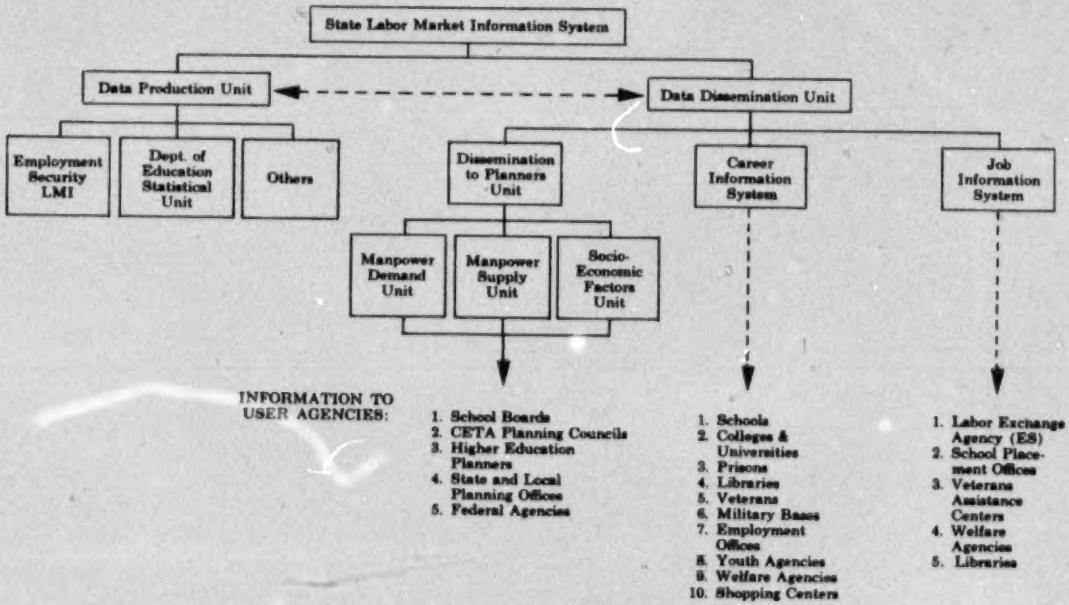


Figure 1. A State Labor Market Information System

Systems Grants Program. The main points are summarized below:

1. Most people need reliable, up-to-date, and locally relevant occupational information on which to base career decisions. Nevertheless, this kind of information is not available in useful form in most parts of the country. The development of career information systems in states and local areas is a sensible way to meet this need.

2. Career information consists of (a) occupational information and (b) education and training information. The latter is needed by the person who has made at least a tentative vocational decision and desires some formal schooling or training to prepare himself for entry into an occupation. A career information system should receive sufficient funds to develop both kinds of information, so that quality standards are maintained and one kind of information is not developed at the expense of the other.

3. The development of occupational information should take into account the kind and number of information topics and occupations covered; the level of geographic specificity of the information; the length, detail, format, and language level for presentation of information; and the accuracy and currency of information.

4. The information delivery component of career guidance and information systems is generally far better developed than the information development component. Most of the systems presently in use deliver national but no localized occupational information. Those which do provide localized information tend to have weak verification and updating procedures. Hopefully, the Labor Department's grants program will develop in each participating state and local area an information base which is worthy of the sophisticated methods of dissemination which are now available.

5. However great the need for more and better localized data for manpower and educational planning, the Occupational Information Systems Grants Program as-

serts the primacy of the consumer in making available in usable form the kinds of information needed for career and job choice. Adequate information can be developed in most areas from existing data sources. Waiting for a perfect data base will be a long wait indeed. Although efforts to improve and extend methodologies to obtain local labor market information should continue, a concurrent parallel effort should occur to make maximal use of data which are already available.

6. The absence of studies which compare the real costs and performance of the different delivery systems in achieving common goals makes it impossible to conclude that any one is better than any other. Comparative research and evaluation of alternative delivery systems using different media and information accessing strategies merits high priority. The Departments of Labor and HEW and the National Science Foundation, all of which have manifested interest in this area, should make cooperative arrangements to fund such comparative studies.

7. The Labor Department's guidelines for the delivery component of the system it will fund attempt to provide certain usage guarantees rather than prescribe the kind of delivery system to be employed. These guarantees concern the easy access and quick retrieval of attractively packaged information, as well as the need to provide for the privacy and confidentiality of personal data fed into or generated by the system.

8. If high quality state and local area occupational information is to be provided to individuals making vocational choices, there must be considerable cooperation between the agencies which produce the basic data (e.g., Employment Security) and agencies which use these data (e.g., the State Department of Education and the schools). The "system" cannot be divorced from the human element. Good personal relationships, institutionalized sharing of responsibility and authority, and the willingness of all participants to put the needs of the

consumer above "turf" considerations are essential for the effective efficient operation of a career information system.

9. A wide range of academic disciplines and work skills should be represented on the staff of a career information system, including labor economics, career counseling and education, research and evaluation, and public administration/business management. Even if such a staff were assembled, considerable technical assistance and training would have to be provided, for there is a dearth of experience with this sort of system. A new National Occupational Information Service has been established in Washington to provide this assistance as well as to administer the grants program generally.

10. The frequent submission of a career information system to the market test through various cost-sharing mechanisms is a promising way of assuring responsiveness to the consumers of the information. User agencies such as schools will not assume the delivery or equipment costs nor a portion of the information development costs if they perceive the information to be of no value to their clients. State and local governments will not seek to renew annually their federal grants and gradually take over the funding themselves if the program is not viewed as worthwhile.

11. Job search information is not the same as career information. In addition to information about specific job openings, the job seeker wants outlook and wage information that is much more highly localized than that required by the person who is in the process of career exploration. Assuming that job search information is available elsewhere in the community, a career information system would be wise to concentrate its resources on the development of good occupational and education-training information. The inclusion of job search information into the system makes the most sense when the user agency (e.g., school) has its own placement service.

Unlike most papers about information systems, this one will not conclude with a call for more research. Indeed, the Labor Department's Occupational Information Systems Grants Program is premised on the fact that enough is known about occupational information development and dissemination to begin an operational program. As such the program is directly concerned with the intelligent application and expeditious implementation of ideas and concepts already formulated, recommendations already made, programs already developed, and research evidence and information already available. Further research leading to refinement and improvement of the program, obviously, is not precluded. The same would hold for any government program emerging from R&D status.

The provision of current, comprehensive, localized occupational information in useful, meaningful form has too often been a weak link in vocational guidance. With the support of educators, counselors, manpower personnel, employers, and workers, we believe this program can help to strengthen the vocational guidance process and thereby promote a more successful transition from school to work.

Notes

1. J. E. Harris, "Sex Bias and Computer-Based Guidance Systems," unpublished paper. National Institute of Education Contract No. OE=0-72-5240 (Washington, March 1974).

2. ——— and D. E. Super, "The Computer: Guidance Tool of the Future," *Frontiers of Educational Measurement and Information Systems*, ed. E. Coffman (Boston: Houghton Mifflin, 1973).

3. A. Kroll, "Computer-Based Systems for Career Guidance and Information: A Status Report," *Focus on Guidance*, March 1974.

4. D. E. Super (ed.), *Computer Assisted Counseling* (New York: Teachers College Press, 1970).

5. J. Weinstein (ed.), *Computer-Based Vocational Guidance Systems*. U.S. Department of Health, Education and Welfare. Superintendent of Documents Catalog No. 5225:25053 (Washington: U.S. Government Printing Office, 1969).

6. W. Willingham et al., *Career Guidance in Secondary Education* (Princeton: College Education Board, 1972).

7. The Employment Service has attempted to do this for its clients through the Job Information Delivery System (JIDS). Whereas JIDS places most of its emphasis on job information for job ready clients, a Career Information System (CIS) would place most of its emphasis on the provision of career information for occupational exploration and choice.

8. There are several examples of pressure from special interest groups to change the kind of information presented. In one county, several private or proprietary vocational schools which provided training in trades having an oversupply of qualified individuals objected to the dissemination of this fact because it would lead to fewer enrollments in these schools. In another area, unions strenuously objected to the dissemination of information which revealed the racial composition of certain occupations in that area.

# The California Experience

*Benjamin Hargrave*

*Introduction*

In 1971 the California State Employment Security Agency and the California State Department of Education initiated a joint effort aimed at the development of a Manpower Management Information System that included reliable information about current and projected manpower needs for the State and its labor market areas so that the Education System could provide effective occupational preparation programs for the youth of California.

A complete presentation of the California Experience would involve detailing the purposes, the functions and the aims of three distinct integrated groups that are responsible for the development and maintenance of California's Manpower Management Information System. This paper, however, will limit itself to a description of what happened in California from 1971 to the present, why and how we organized an interagency-interorganizational approach to the problem and what has been accomplished to date—all seen from the writer's vantage point as Deputy Director for the State Employment Security Agency responsible for directing the De-

partment's Office of Education/Training Liaison and chairing the Joint Occupational Preparation Task Force from January 1972 through June 1974.

The three distinct integrated groups—the Joint Occupational Preparation Task Force, the Board of Directors and the Work Group (Southern California Operations Group)—that form the Administration/Operational Structure are also described.

The comprehensive Manpower Management Information System as currently envisioned is shown in a schematic diagram at the end of this paper.

The Manpower Management Information System PROJECT (MMISP) is the short-range first step in the development of a comprehensive system. MMISP is designed to test some of the assumptions upon which the comprehensive system is based.

*Background*

The continuing high unemployment of youth is a major social problem in California as well as the nation. When the monthly unemployment statistics produced by the State Employment Security Agency, the Employment Development Department (EDD) are analyzed, it becomes clear that one of the greatest barriers to employment is being young—youth seeking that first permanent job.

Many authorities believe that this high youth unemployment is due to the lack of preparation of most youth for the world of work. In California, we ask our Education System to provide this preparation of youth for the world of work.

The assumption that most of our youth are not properly prepared for the world of work resulted in four actions at the State level in 1971.

1. In August 1971, the State Legislature passed Assembly Bill No. 102 which added Section 7504 to the Education Code, relating to educational opportunities:

The People of the State of California do enact as follows:

> The Legislature hereby recognizes that it is the policy of the State of California to provide educational opportunities to every individual to the end that every student leaving school should be prepared to enter the world of work; that every student who graduates from any State-supported educational institution should have sufficient marketable skills for legitimate remunerative employment; and that every qualified and eligible adult citizen should be afforded an educational opportunity to become suitably employable in some remunerative field of employment.

2. Recognizing that vocational/occupational education is the vehicle we use to move some students through the Education System into jobs, the Governor assembled a Task Force on Occupational Education in January 1971. This Task Force, among other things, was charged with the responsibility for developing an action plan to improve vocational/occupational education in the State of California. Recommendation No. VIII from this Task Force detailed the need for a State Management Information System that included information about current and future labor market needs.

> Recommendation No. VIII
>
> That the Department of Human Resources Development, in consort with the State Department of Education, develop a standardized, computerized data collection and retrieval center which will permit continuing evaluation of current educational placement efforts and identification of emerging labor need areas.
>
> The labor market is the focal point of job dislocation. At the same time, unemployment exists in some areas, numerous jobs remain unfilled in others. It is readily apparent that a reconciliation of labor needs and occupational preparation is essential. A division of responsibilities with (a) the Department of Human

Resources Development, accountable for the compilation and analysis of data concerned with labor market needs, and (b) the Department of Education responsible for the development of appropriate instructional programs, is indicated. Data which possesses *qualitative*, as well as quantitative, properties must be available if the problems of underemployment, as well as unemployment, are to be conquered.

*Note:* On January 1, 1974, the name of the Department of Human Resources Development was changed to the Employment Development Department (EDD).

—Page 31. Report of the Governor's Task Force on Occupational Education Program Assessment, Policy, and Financing. March 12, 1971.

3. Two major employers in California—the President of Pacific Telephone and the Chairman of the Board of Bank of America—initiated the formation of the Industry-Education Councils of California to merge all of the Industry-Education activities (Investment in America, Junior Achievement, Chamber of Commerce activities, and Industry-Education Councils, etc.) so that the resources of business and industry could be made available to the Education System in a systematic way.

The Industry-Education Council of California was officially created on January 18, 1974, with the Chairman of the Board of Bank of America as President of the Board of Trustees and the Superintendent of Public Instruction as Vice President of the Board of Trustees. Also, on the above date, the Board of Trustees, Industry-Education Council of California, approved a three-year operational plan targeted to create a statewide program for economic literacy, career awareness and career guidance—kindergarten through Grade 14.

4. Within the State Employment Development Department, the Director established the Office of Education/Training Liaison. This Office was established to identify within the Education System (primarily high schools and community colleges) those areas where EDD could assist as they prepare students for the world of work and to provide the necessary assistance.

These last three actions recognized that the Education System needed the assistance of Business/Industry and State Government.

In 1971, the Governor directed the Director of EDD to work with the Superintendent of Public Instruction on Recommendation No. VIII from the Governor's Task Force on Occupational Education: Program Assessment, Policy and Financing.

> *The Task:* Develop a management information system that includes manpower projections—a system that has national, state and local information about jobs: where are the jobs by occupation in what industries today; where will these jobs be tomorrow? 1975? 1980? Or, more specifically, what are the trends?

Work began on this Task in June 1971 with staff from EDD and the State Department of Education. This group was named the Joint Occupational Preparation Task Force (JOPTF).

1. Education was asked and agreed to detail the occupational information they needed for planning vocational education, occupational education and counseling and guidance programs.
2. EDD was asked and agreed to describe the occupational information already available in-house, together with information that could be gathered, organized and disseminated.

It was obvious that the task required a joint effort—EDD and Education. In January 1972, the initial work group was enlarged to include senior staff members from other State agencies—the Chancellor's Office of the California Community Colleges, the State Department of Finance, the State Department of Welfare, the California Chamber of Commerce, and the California Advisory Council on Vocational Education and Technical Training. This recognized that the sources of information needed cut across several agencies—State and Federal—and that the users of the information should be involved from the beginning.

From January 1972 until August 1972, this Joint Task Force studied and evaluated four projects that were designed to develop labor market projections—projects funded by Vocational Education funds and conducted by County Offices of Education. The Ventura County Project was one. The Task Force also reviewed the comprehensive study by Margaret Thal-Larsen entitled, "Requirements and Design of a Labor Market Information System for a Large Metropolitan Area." The joint Task Force also worked together on responses to two Legislative Assembly Resolutions that addressed the need for occupational information and manpower projections.

These responses were done jointly because the Departments charged in each Resolution had representatives on the Task Force, and because each Resolution addressed a critical area that was recognized by the members of the Task Force as being needed. Our monthly meetings were candid/honest/to the issues.

*The Task: Develop a Manpower Information System*

In order to address this task, we knew that authority was needed. We agreed that this authority could be assembled under administrative mandate—a consortium approach—a common agreement that recognizes the fact that we share the same goals, and that these goals are best pursued jointly as we seek to attain them.

In August 1972, we sought and secured this authority. The heads/directors of each participating Department were asked to sit as a Board of Directors to consider the recommendations from the Joint Occupational Preparation Task Force's Senior Staff. The Director of EDD chairs this Board of Directors. At this meeting, the Board of Directors agreed to add a representative from business/industry and from labor. There was discussion about also adding a representative from the State College/University System, but no final decision was made. The Board also endorsed the responsibilities of the Task Force as being twofold:

1. To coordinate all manpower information systems projects in the state, and
2. To develop a comprehensive statewide manpower management information system for planning manpower training, vocational education and occupational guidance.

The present Board of Directors are:

The Director—State Employment Development Department

The Superintendent of Public Instruction

The Chancellor of California Community Colleges

The Director—State Department of Finance

The Governor's Education Advisor

The Education Director—California Chamber of Commerce

The Director, Educational Liaison—State Health and Welfare Agency

The Vice President, Industrial Relations—Standard Oil Company of California

In January 1973, the Task Force's Senior Staff *agreed* that manpower projections are but one of the needed components of a comprehensive system. This agreement evolved after several meetings.

*Two Issues:*

*Education:* If we had information about future jobs we could plan more effective vocational/occupational programs; we could drop some ineffective vocational/occupational courses and add some others. We could prepare most students for the world of work.

Not sure/convinced EDD had the capability or desire to produce such information that would be useable. Being aware of EDD's funding sources (Department of Labor), if this is not a priority with DOL, can it be a priority for EDD?

*Employment Development Department—(EDD):* Agreed that information about future jobs needed; insisted that more than demand information needed.

- Information about the supply of workers also needed. That effective planning of vocational education/occupational education programs and career guidance programs must take into account the many and varied sources of entrance to employment in specific occupations: promotions from within industry, on-the-job training, military, job shifts, in-migration, private vocational schools, etc.
- Not sure/convinced that Education would use the information; little evidence that information EDD now sends to schools is being used.

These are honest issues. We are in the process of testing them in California.

We agreed that the three basic components of a management information system are: Demand, Supply, Population Needs/Interest.

*Component A—Demand (Jobs)*

Where are the current jobs by occupation, by industry, by volume?

What are future job prospects/trends for 3 years, 5 years, hence?
What competencies do employers require?

*Component B—Supply (Workers)*

How many workers are being trained for what jobs/occupations? by which organization—schools, community colleges, private agencies, industry, military?

*Component C—Population Needs/Interest*

What are the employment needs/interests of Californians by labor market areas?
What are the socio-economic characteristics?
What are mobility patterns?

*Work Group*

We appointed a subcommittee to develop a comprehensive system. This subcommittee was directed to use the Ventura County model because they were using the Industry-Occupational Matrix that was BLS-EDD's method of producing projections. The subcommittee was directed to identify what we could and should do first. The subcommittee was also informed that they would, as the work group, implement the first part of the system in the Los Angeles Basin; thus this subcommittee became known as the Southern California Operations Group (SCOG). The Los Angeles Basin contains about half of California's workforce.

The Subcommittee (SCOG) submitted a proposal that contained two distinct parts:

*Part A* was an action proposal consisting of five separate activities involving various degrees of time commitments that can be implemented concurrently or separately. Each activity addresses an essential step in developing a matching process between current and projected occupational "demand" and educational "supply" data with techniques for using the informational output in planning and developing training programs and counseling services.

*Part B* was a Comprehensive Manpower Management Information System (MMIS) consisting of three components.

This proposal was approved by the Task Force and presented to the Board of Directors with a request that they endorse Part A for implementation. The Board's endorsement meant three things:

1. That the current and planned activity staffing committed to this proposal by EDD-Education would continue through June 1974.
2. That no similar project would be approved in California during the period of this study. This included direct funding from Region IX, DOL/HEW, or funding from Washington.
3. That their influence would be available to use as we sought information from industry, military, private schools.

The Board of Directors approved Part A of the Proposal which is called the Manpower Management Information System project (MMISP).

*Project Objective—MMISP*

The original objective of MMISP was to match occupational projections (Industry-Occupational Matrices) for the 1972-75 (1976-1980) period for approximately 450 major occupations representing about 200 industries in Los Angeles, Orange, Ventura, San Bernardino and Riverside Counties, produced by the State Employment Development Department's Employment Data and Research Section staff, with current and projected student enrollment in vocational education programs (public secondary schools, community colleges, adult education programs and regional occupational programs and centers), in the same geographical area. The resulting information was to indicate to what degree local vocational education and manpower training programs address the realities of existing and future labor markets, in terms of

actual labor supply/labor demand relationships; and to allow local school administrators and manpower planners to base their curriculum and program planning and funding on this scientifically assembled, empirical information. In addition, the information produced was also to be available to individual schools, colleges and manpower training institutions for relevant career counseling of students.

The matching of manpower supply and demand information accomplished during the Project's short-range phase, constitutes the first and most important step in the design and implementation of MMISP's long-range objective: the development of a complete Manpower Management Information System, incorporating, on a statewide basis, three major system components: the Manpower Demand Component; the Manpower Supply Component; and the Socio-Economic Factors Component. (A schematic diagram of the total Manpower Management Information System, as currently envisioned, is attached.) Assuming that adequate funding and staff support is made available for FY 1974/1975, the basic Manpower Management Information System could be completed within the next year.

MMISP also included five tasks that were studied during the Project Period (July 1973—June 1974) by designated members of SCOG. The five final reports (June 1974), one for each of the five MMISP tasks, were prepared individually by each Task Group Leader. The reports follow a simple outline:

*Goals and Objectives* are listed and explained;
*Activities and Accomplishments* are described in detail, for FY 1973/1974;
*Conclusions* are drawn; and specific, technical
*Recommendations* are outlined.

A summary budget for the entire Manpower Management Information System Project constitutes, in effect, the MMISP Task V Final Report.

*The Five MMISP Tasks*

*Task I—Prepare Cross-Reference Materials*

Goal: To develop and establish methodology and procedures for preparing and implementing a means of cross-reference among DOT Census and United States Department of Education occupational classification coding systems in order to enable users to apply occupational projects from the Industry-Occupational Matrix to school and training output data as a measure of matching of demand and supply and to assess training and other manpower needs: and to generate a cross-reference system that will be integral to the general successful development and implementation of the total MMIS.

*Task II—Develop Education Projection Techniques*

Goal: To apply statistical techniques to available vocational education program enrollment and completion data for public secondary schools and community colleges that would produce educational supply projections. The resulting information was to be made compatible with employment demand data represented by the EDD Standard Metropolitan Statistical Area Industry-Occupational Matrices as to job categories and educational programs, projection time line, and geographic areas (SMSA). The resulting report was to indicate occupational supply-demand relationships in a format that is replicable statewide.

*Task III—Identify Additional Supply Information*

Goal: To identify and study the feasibility of collecting, summarizing, projecting and analyzing available information on major labor supply components for the purpose of eventually matching total labor demand with total labor supply in local labor markets, for the MMIS Project Area.

*Task IV — Develop Information Dissemination Techniques*

Goals: 1. To determine and develop appropriate dissemination techniques, encompassing all activities of the Joint Occupational Preparation Task Force—Manpower Management Information System Project, for various levels of educational agencies, State Employment Development Department, and other manpower planning organizations.

2. To conduct a series of in-service training workshops in the Greater Los Angeles Basin Area, designed to instruct the participants in the structural content and procedural use of the Manpower Information System as a manpower planning tool.

*Task V—Budget*

Goal: To identify and cost continuation procedures.

*Project Administration*

The *Board of Directors* (Joint Occupational Preparation Task Force) continues to function in its policy-setting role for the Task Force. In approving the Project's implementation, the Board has assumed final responsibility for insuring that resources committed to the Project remain committed for its entire duration; and it will also make a determination on the feasibility of extending the Project, to include its long-range objective, after the information-matching phase has been successfully completed.

The *Joint Occupational Preparation Task Force*, aside from continuing to discharge its originally assigned obligations, acts as a monitor of the Project's progress, in relationship to the performance standards laid out in the short-range "Work Plan," as well as of those in future work plans; as an advisor on technical issues which can be clarified on the basis of expertise assembled on the Task Force; and as a facilitator of needed support from public and private sources.

*The Project Coordinator and Liaison Administration (PCLA)* is responsible for the overall direction, coordination and control of the Project. In that function it

oversees the day-to-day administrative detail involved in accomplishing the Project's five tasks most effectively and efficiently; it solves operational problems; coordinates activities so as to avoid duplications of effort and bottleneck situations; obtains and allocates resources as needed; and prepares monthly progress reports.

PCLA also acts as the necessary organizational link between the Operations Group and the Joint Occupational Preparation Task Force: it has the responsibility of reporting to the Task Force about the Project's progress; it submits to the Task Force any issues which require policy determination, adjustments to the original work plan, additional resources, or special technical support. In the same manner, PCLA communicates to the Operations Group all Task Force decisions regarding the Project and is responsible for translating such decisions into administrative implementation.

Finally, the Project Coordination and Liaison relationships with local, State and Federal governmental bodies, business and industry, labor groups, educational and other research organizations, academia, etc., in order to generate active support and cooperation vital to the Project. The task involves the identification and obtaining of general program information, statistical reports, research documents and the rendering of special services, as indicated by developing needs.

PCLA's liaison responsibilities also extend to a public relations role: it furnishes information about the Project to interested parties and represents the Project's interests to individuals and organizations not actively involved in it. Examples of PCLA liaison activities are to inform administrators of local schools and colleges and of local manpower and other agencies about the Project and to solicit their active support; to explore with the U.S. Departments of Labor and Health, Education and Welfare (Office of Education) the possibilities for program and funding commitments to periodically update the

manpower supply/demand data on which the Project is based; etc.

During MMISP's short-range phase, the Project Coordination and Liaison Administration has been located in the Office of Education/Training Liaison, State Employment Development Department.

The *Southern California Operations Group (SCOG)* has been composed of five Task Group Leaders, their respective Task Group members and staff, and a Group Coordinator. Each Task Group Leader has the responsibility of achieving his/her assigned task according to the work plan prepared by him/her, and the commensurate authority to select the members he/she wishes to participate in his/her Task Group. Task Group Leaders report to the Coordinator, who, as a *primus inter pares*, is responsible for coordinating activities on the local level and for consolidating progress reports, requests for technical and research support and other matters; and who, in turn, reports to the Director of Project Coordination and Liaison Administration.

*MMISP Modifications*

1. In April, 1974, the Joint Occupational Preparation Task Force officially included San Diego as the sixth County in the MMISP. This action responded to the long-standing request from San Diego County educators to be included and upon the recommendation from SCOG.

   This decision was prompted primarily by the recognition that considerable expertise and ready commitment to the goals of MMISP existed in San Diego; and that unless San Diego was included into the Project area, educators and manpower planners in that County would not hesitate to develop an MMIS on their own. It was generally felt by members of the Southern California Operations Group and the Joint Occupational Preparation Task Force that this modification of the original

MMISP objective added significantly to the scope and value of the Project.

2. The Chairmanship of the Joint Occupational Preparation Task Force Senior Staff has moved from the Employment Development Department to the Governor's Office. For Fiscal Year 1974/75 the Governor's Education Advisor will chair the Joint Occupational Preparation Task Force's Senior Staff.

*Final Observations*

1. MMISP is a Project—not another research study. One of the basic tenets of the Project is that it seeks to implement existing information at the local level. It is directly concerned with the intelligent application and the expedient implementation of ideas and concepts already thought, recommendations already made, programs already developed, and information already available.
2. It is a coordinated effort involving various government agencies—state, local and federal—business and industry, unions, advisory councils, public and semi-public groups, any and all organizations which have a bearing on the Project and which can be expected to constructively work with and support the Project objectives.
3. The project is flexible in its approach and in its administration. It is not limited to one particular method or information source. At this time, it does not rely for support on one single source; therefore, it is not bogged down by bureaucratic authority structures.

   For example, the current short-range information matching component, completed by June 1974, got started by sharing staff and funding sources already committed by various agencies and local administrations; which means that the professionals assigned to the Project have to do the job

in addition to their regular job. This small group (7) of professionals are known as the Southern California Operations Group (SCOG). As individuals, they are capable, experienced and knowledgeable in research techniques, labor economics, and vocational education curriculum. As a group, they are intelligently honest and determined to complete their tasks.

Finally, legislation at the Federal level and at the State Level in California mandate cooperation between the State Manpower and Education Agencies. School Districts in California are tooling up to prepare their students for the world of work, whether they are college-bound or not. They believe that all students need to know how people make a living, what jobs are performed, and the requirements for securing these jobs. They are demanding from EDD information about present and future job opportunities.

State of California

Joint Occupational Preparation Task Force

Manpower Management Information System—Schematic Diagram

| MANPOWER DEMAND COMPONENT | | MANPOWER SUPPLY COMPONENT | | SOCIO-ECONOMIC FACTORS COMPONENT | |
|---|---|---|---|---|---|
| 1.0 | *Local Occupational Demand* | 1.0 | *Local Educational Supply* | 1.0 | *Demographic Information* |
| 1.1 | Current (1974) | 1.1 | Public Secondary Schools | 1.1 | Population Characteristics |
| 1.2 | Projected (1975-1980) | 1.2 | Public Junior Colleges | 1.11 | Age Groups |
| 1.3 | By SMSA | 1.3 | Public Adult Schools | 1.12 | Sex Distribution |
| 1.4 | By County | 1.4 | Public Regional Occupational Programs and Centers | 1.13 | Racial/Ethnic Backgrounds |
| 2.0 | *Local Industry Demand* | 1.5 | Public Colleges and Universities | 1.14 | Fertility Patterns |
| 2.1 | Current (1974) | 1.7 | Private Vocational Schools | 1.15 | Educational Backgrounds |
| 2.2 | Projected (1975-1980) | 1.6 | Private Secondary Schools | 1.16 | Occupational Backgrounds |
| 2.3 | By SMSA | 1.8 | Private Colleges and Universities | 1.17 | Income Groups |
| 2.4 | By County | 1.9 | By SMSA | 1.2 | Mobility Patterns |
| 3.0 | *Hiring Standards* | 1.10 | By County | 1.3 | Current (1974) |
| 3.1 | Technical Competencies | 1.11 | By School District | 1.4 | Projected (1975-1980) |
| 3.2 | Skill Level | 2.0 | *Local Apprenticeship Training Programs Supply* | 1.5 | By SMSA |
| 3.3 | Attitudinal Requirements | 3.0 | *Local Employer Training Programs Supply* | 1.6 | By County |
| 4.0 | *Specialized Information on Occupational and Industrial Demand* | 4.0 | *Local Military Returnees Supply* | 2.0 | *Economic Need Analysis* |
| 4.1 | Local Characteristics | 5.0 | *Local Supply Resulting from Unemployment* | 2.1 | Impact Analyses on Technological Trends, Scientific Discoveries, Changing Economic Patterns |
| 4.2 | Detailed Industry Profiles | 6.0 | *Adjustments to Local Supply* | 2.2 | By Nation |
| | | 6.1 | Labor Force Migration | 2.3 | By State |
| | | 6.2 | Labor Force Re-entrants | 2.4 | By SMSA |
| | | 6.3 | Occupational Transfers | 2.4 | By County |
| | | | | 3.0 | *Student Interests and Occupational Preferences* |
| | | | | 3.1 | Student Follow-up Surveys |

# Application of Information Systems to Career and Job Choice

*Bruce McKinlay*

In considering the question of improving labor market information for youth, one is tempted toward methodology or toward service, that is toward improving our manpower data or toward strengthening our counseling services. Certainly there is much to be done in both areas, but even at their best, data producing agencies and counseling offices are an incomplete information system. The distribution function is missing. As with any other good, information must not only be produced, it must be delivered, either directly to the consumer or to his or her agent, the counselor, teacher, or placement officer.

It is really quite remarkable that we have missed this analogy so long. Instead of recognizing that information delivery is a necessary part of effective production and use, we have berated data producing agencies for unattractive reports and counselors for ignorance of the labor market. Without depreciating the truly great service provided by the *Occupational Outlook Handbook* or the great sensitivity of some counselors for the meaning of labor market events, one can fairly generalize by saying that people making career decisions do not have ready

access to the many valuable studies of the Bureau of Labor Statistics, the National Center for Educational Statistics, the Research and Statistics offices of state employment agencies, licensing boards, educational planning agencies, research centers, trade associations, or all the other places where useful information is produced. The professional researcher, and sometimes the program planner finds it and can comprehend it, but the career decision-maker neither finds it nor comprehends it in its raw form. We are now coming to realize that delivery is necessary to the effective utilization of research.

We are also getting over the naive notion that social problems are solved simply by sending counselors forth to do good. Like other practitioners, they need tools and other support systems. Clearly a career information system is in this realm. Individual counselors are not expected to construct, validate, and standardize their own tests, and they should not be expected to collect, analyze, and store their own labor market information.

There have been numerous attempts to build occupational information delivery systems, more than 30 by one estimate. As with any new venture, the vast majority failed, but enough have succeeded to prove their feasibility, attractiveness, and contribution to sound decision-making.

It is not the purpose of this paper to discuss career information delivery systems *per se*, but to describe an effort to operate such a system, that is, to address the questions of organization and management raised by the existence of an effective delivery system. The effort in reference is a three-year implementation project in the state of Oregon known as the Career Information System. The objective of this experiment was to ascertain what is required by way of information development activities to translate basic labor market data into information that is intelligible for individuals, what is required by way of in-service training and related activities to

foster effective use of the system, what is required by way of management to keep the pieces reasonably intact, and, perhaps most importantly, to discover whether such a system would be supported by its constituents. To put it simply, the Oregon project was an attempt to answer the question, "Can a small western state find the wherewithal to give its people the straight scoop on jobs?"

This is not the first time someone has tried to implement an information delivery system. There are microform "VIEW" projects in many states, and the computerized "CVIS" program is being operated in several places. But their financial and technical resources have been limited. They have typically been operated as special projects by single agencies, often individual school districts, for the benefit of a single clientele, usually secondary school students. They have therefore been forced to seriously compromise information development or service to user agencies. The Oregon approach is of interest, therefore, because of its attempt to tap the resources and serve the clientele of various agencies and to establish an information delivery system on a permanent financial and institutional foundation. This paper will concentrate on the organizational strategies employed to establish a career information system in the existent economic and institutional environment.

*Characteristics of the Environment*

Several characteristics of the environment are significant to the effort and to understanding the extent to which Oregon's experience can be generalized. These characteristics are as follows:

*Characteristic 1.* People who need occupational information are scattered among many types of schools and agencies (and many are not served by any institution). High school students are not the only people who make career decisions and need occupational information. The clientele for such information extend at least to junior high schools, colleges, vocational rehabilitation offices,

correctional institutions, and community centers.

*Characteristic 2.* No single agency had the breadth of mission or the expertise to carry out the full range of information development activities and to relate the system effectively to the various types of schools and social agencies. Knowledge of data sources does not suffice in integrating information into school counseling systems, nor does the reverse apply.

*Characteristic 3.* No single agency has the money, or more precisely, no agency is prepared to re-order its priorities sufficiently to underwrite the operation of such a system. In fact, it was only in the Oregon system's fourth year that either of the two most likely candidates, the Employment Security Agency and the State Department of Education, contributed financial support, and that was from a federal career education windfall.

Nonetheless, there are significant, if fragmented resources, that are likely to be found in all states.

*Characteristic 4.* Counseling services exist in a wide variety of institutions.

*Characteristic 5.* Data that are useful in career planning or, if not directly usable, that can be utilized to make helpful observations, do exist in a wide variety of places.

*Characteristic 6.* Concern for career planning is being stimulated in many quarters by the career education movement.

There are a few characteristics that are somewhat peculiar to Oregon that are also significant.

*Characteristic 7.* The population is small—2.2 million, requiring widespread use to justify the service.

*Characteristic 8.* The state has several distinct economic regions ranging from coastal plain to high desert with distinctly different labor markets, requiring localized information.

*Characteristic 9.* The State Department of Education has fostered an extensive career education program, in-

cluding a staff of regional career education program coordinators who have provided substantial assistance in local implementation efforts.

*Characteristic 10.* The Employment Division has a better than average set of occupational employment data accruing from its extensive skill surveys and early work with the industry-occupational matrix.

As an environment for implementing an occupational information system, Oregon shares many salient characteristics with other states, notably limited resources and fragmented services. It has certain disadvantages accruing from its size and population and certain advantages in relevant research and service activities.

*Features of the System*

The features of an occupational information delivery system are such that they forced Oregon to confront the characteristics outlined above.

*Feature 1.* The costs of operating the system are not trivial. Information files must be written, materials must be produced and distributed, and the staff of user agencies must be trained. Implementing a system is not simply a matter of loading a computer program on a new machine, but requires an interdisciplinary staff and appropriate management systems.

*Feature 2.* Not only are costs substantial, they are continuing. Labor market information is of frustratingly short useful life, as we all know, so files must be continuously updated. Moreover, personnel in schools must be introduced to the system and experienced personnel shown more creative ways to utilize it. One-time implementation costs are a small part of the cost of operating the system; its costs are not front-loaded.

*Feature 3.* The marginal costs of added information (additional occupations, new topics, local geographic areas, etc.) are high relative to average costs, but the marginal costs of serving additional users are low. The reason is that costs of information development and man-

agement are relatively fixed, while the costs of materials and computer time are a function of the number of users. At current volume of usage (140,000 individuals), fixed and marginal costs are approximately equal at $200,000 each.

*Feature 4.* The delivery system itself is relatively new, undoubtedly requiring fine tuning if not major modification during its early years in response to the experience of users.

The extent to which these features would characterize delivery systems other than the one Oregon operates is not entirely clear, for available cost data about systems are not comparable. However, the fact that information development and inservice training are major, common cost elements and the fact that Oregon operates both computer and manual needle-sort delivery systems suggest that other systems would exhibit similar features, though marginal costs of adding users is probably higher with many systems.

*Strategic Decisions*

Given these features of the delivery system and this environment, one can better understand the decisions to innovate in the organization and management of the system. Several of those decisions are significant to the development of the program in Oregon and are instructive for other states as well.

*Strategic Decision 1: Use of Existing Data.* Limited resources for basic data production and suspicion that creative use of existing sources can produce a lot of useful information for individuals prompted major efforts to use existing data sources. Standard labor market data sources were used, but also tapped were obscure and informal sources including many that were originally established for other purposes altogether in preparing occupational and educational descriptions.

*Strategic Decision 2: Consortium Management.* While no agency wanted complete financial responsibility,

neither did the planning group want to see the system become the agent of any single institution. Consequently, the system is managed by an interagency consortium representing data-producing and information using agencies. Approximately half the consortium board members represent user agencies. This interagency approach is advantageous as the staff tries to serve both schools and social agencies with their disparate traditions.

*Strategic Decision 3: User Fees.* Another most interesting strategic decision, made of necessity rather than desire for economic experimentation, was the decision to base financial support on user fees paid by the schools and other population serving agencies. This decision was calculated to achieve a broad financial base and to assure the organization's responsiveness to users. This strategy obviously required an initial subsidy until a user base could be established, and that subsidy was provided by the Manpower Administration's Office of Research and Development in the form of a declining contribution over a three-year period.

*Strategic Decision 4: Marketing.* Widespread usage as a means of minimizing average cost is an obvious goal in such an environment, so the Oregon Career Information System embarked on an active marketing effort, initially among secondary schools, then among community colleges and social agencies.

The price schedule under which the Oregon System has been operating provides a price break for quantity usage. This practice is partially a recognition of the economies of scale associated with area-wide usage, but it is also an intentional inducement to group agreements covering a number of school districts in a single geographic area. Under these group agreements part of the responsibility for materials distribution, training, coordination and troubleshooting is borne by the sponsor agency (usually an intermediate education district, or county school office). This division of labor capitalizes

on local relationships, enhances the user agencies' sense of control over the system, and reduces the need for staff to deal continuously and directly with each of the schools using the system.

*Response of the Environment to Oregon's Career Information System*

Perhaps the biggest question to which the Oregon experience provides some answers is the question of whether schools will respond to a quality, localized service when they must pay for it. The answer is clearly affirmative, at least at a cost of $2 to $3 per student per year. At these costs, usage of the system has doubled annually for four years.

| *Fiscal Year* | *Number of Users* |
|---|---|
| FY 1971 | 1,000 (experimental) |
| FY 1972 | 15,000 |
| FY 1973 | 30,000 |
| FY 1974 | 70,000 |
| FY 1975 | 140,000 (preliminary) |

Widespread usage has been achieved in secondary schools and community colleges, with substantially less usage in other sectors of education and in social agencies. During the current year, usage is expected as follows:

| *Institution* | *Percent of Clients Using CIS* |
|---|---|
| Secondary Schools (junior and senior high) | 60 |
| Community Colleges | 40 |
| Colleges and Universities | 10 |
| Social Agencies (primarily correctional, community action agencies, and vocational rehabilitation) | 25 |

Fees from these user institutions currently cover approximately 95 percent of the cost of operating the system.

The responses of some agencies have been more hesitant, however, and there has been one frankly competitive response—a computer program for occupational guidance.

It would be an exaggeration to say that the system has become the coordinator of career education, manpower programs, and career guidance in the state; but it does serve as one such force. Its Board provides a regular forum for understanding and informal mediation of agency interests. Communication and cooperation on matters unrelated to CIS have occurred as a result.

While it is a lot of work, and certainly not costless, the consortium approach has served its original purpose, namely to provide a broad financial base, to improve access to the informational and service resources of disparate institutions, and to provide an environment for information development relatively free from the partisan biases that exist in institutions that have special program interests to promote.

The relation of the system to program planning is a matter of some interest here. To understand it one must remember that the system's output is primarily designed for individual career decision makers. Partially because of this emphasis and partially because of its user support, it has developed something of a consumer orientation, and is seen as a service to the clientele of local agencies rather than as part of the state administrative and planning structure. Nevertheless, local program planners find some of the information files to be of direct utility, and the staff is frequently called upon for assistance with manpower or career education program planning questions.

*Conclusions*

What is to be learned from the Oregon approach?

First, an effective delivery system is as much a part of improving occupational information for youth as better data and better educational and counseling services.

However, there is much more to implementing a career information system than making a computer run. It requires people, organization, and financing to provide the essential content, management, and service.

Secondly, people do use such systems and service agencies, especially schools, respond favorably to the availability of quality, localized information, even when they must pay full cost for synthesizing and delivering the information.

Thirdly, such an effort is demanding of those involved, requiring new applications of research and counseling disciplines, and a move toward cooperation by institutions that have traditionally valued self-sufficiency and unilateral control very highly.

An interagency consortium provides one effective vehicle for tapping agency resources and mediating their interests, while putting users in the forefront of decision making.

The results of this experiment in Oregon is an operating service that will continue without direct federal subsidy.



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